FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Possibility of Raising Broilers to Heavier Weights Suggested

By ROBERT H. BROWN
Feedstuffs Special Correspondent

ROANOKE, VA.—Some segments of the broiler industry might look into the possibility of carrying broilers more than the usual 9 weeks in order to obtain more meat. There is a possibility that housewives might buy larger birds more readily, and this could mean more feed consumption and a better margin of profit for growers.

The subject was discussed at the Virginia Feed Convention and Nutrition Conference following a new report by Dr. E. L. Wisman of Virginia Polytechnic Institute, who has been conducting tests for two consecutive years.

Consumers would receive about 9% more meat and feed consumption would increase by 20% if broilers were marketed at 10 or 11 weeks rather than 9 weeks of age in a continual operation and with the same house capacity, he said.

Dr. Wisman said his tests show certain advantages and indications

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Survey Seeks to Learn Desirability of Revising Feed Tag Information

AMHERST, MASS.—A study to determine whether, with current knowledge about animal nutrition and available methods of analysis, it is possible and desirable to devise a tag bearing information that will reflect to a greater degree the nutritional value of a feed than does the information on present tags, is being conducted by the Association of American Feed Control Officials.

John W. Kuzmeski, professor in charge of feed, fertilizer and dairy law, University of Massachusetts, College of Agriculture, has been appointed by the association to conduct the survey.

A questionnaire has been prepared and sent to feed control officials, industry members and other interested parties. It is hoped that enough replies will be received to warrant a

(Turn to SURVEY, page 101)

Feed Grain Bill Cleared

Senate Unit Rejects Sale Provision

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—This week, the Senate Agriculture Committee approved its version of a feed grain bill in which it flatly rejected the U.S. Department of Agriculture proposal to permit the sale of corn at the market price—a device which its author deemed necessary to browbeat corn producers to cooperate with an acreage cutback program in exchange for a price support guarantee of $1.20 bu.

Not only did the Senate reject this proposal, but it went even further and provided compensation for farmers who cut back feed grain acreage from the 1959-60 base period, on the basis of a feed grain acreage cut of 30%, so that they would obtain half in cash and half in payment in kind of 50% of their yields of the grain in the base period.

The Senate committee also advised USDA that it did not accept Secretary Orville Freeman's advice that he planned to boost the support rate for the next crop of soybeans to $2.30 bu., preferring to hold the bean support level at the current rate. However, it may be suspected that since the Senate committee definitely

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FEEDSTUFFS *Features This Week*

PELLETING COSTS—USDA research shows manufacturers how to reduce pelleting costs. **Page 24.**

POULTRY RESEARCH—Dr. J. R. Couch reviews poultry management papers presented at the Southern Agricultural Workers meeting. **Page 26.**

SWINE PROGRAM—A management and housing advice program spurs swine feed sales for a Wisconsin based firm. **Page 30.**

PELLETS FOR LAMBS—The use of high roughage pellets for fattening lambs is discussed on **page 38.**

CALIFORNIA MILL—A versatile California mill specializes in turkey feed operations. **Page 46.**

CROTALARIA—An article on detection of crotalaria seed in mixed feeds appears on **page 91.**

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Greater Feeling of Optimism Among Credit Men Observed

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—A more "comfortable" feeling about farm credit compared with a year ago was evident at the annual farm credit conference of the Kansas City area of the National Association of Credit Men, which took place Feb. 28.

At last year's conference there was much dismay publicly expressed at the state of farm credit and it was apparent that there was much outstanding that was in a past due and delinquent condition. This year there were no complaints of this kind expressed at the meeting and privately many of the credit men said their accounts were in much better condition than a year ago. Many firms had reduced their outstanding credits substantially, some by 15 to 20%, and even those which did not cut back in volume said their past due items now are very low.

Apparently the credit executives were effective in carrying out their

(Turn to CREDIT, page 104)

Profit Pinch Seen In Likely Feed, End Product Prices

By GEORGE L. GATES
Editor of Feedstuffs

MINNEAPOLIS—Higher prospective prices for feed grains and soybean meal, coupled with expanding livestock and poultry production, add up to a probable squeeze on profits for many producers this year, an industry economist forecast at a meeting of the National Feeder Finance Credit Group Feb. 24.

"Those producers who maintain their efficiency will do all right, but others will be in difficulty," James Taylor, head of the business analysis department of The Pillsbury Co., told the credit men.

Mr. Taylor's forecast was based on the expectation of higher feed grain and soybean price supports as

(Turn to PINCH, page 8)

Industry to Outline Its Position on Concentrate Problem

WASHINGTON—The feed industry position holding that users of concentrates containing new drugs should not be required to have FDA clearance will be spelled out at a meeting here March 7 with Food and Drug Administration officials.

The feed industry liaison committee—made up of representatives of the American Feed Manufacturers Assn. and the Grain & Feed Dealers National Assn.—will present a complete statement covering various phases of the problem.

The FDA has said that before new-

(Turn to CONCENTRATE, page 8)

Perdue to Build Soybean Plant

SALISBURY, MD.—A. W. Perdue & Son Co., a major integrated broiler firm, has announced plans to have a soybean processing plant ready to operate in time for the 1961 soybean harvest. The solvent extraction plant is expected to process from 20 to 30% of Delmarva's bean harvest.

The Perdue firm is said to produce

(Turn to PERDUE, page 8)

Cattle Figures Revised

Total Livestock, Poultry Inventory Unchanged

WASHINGTON—The U.S. Department of Agriculture estimates in its new livestock and poultry inventory report that Jan. 1, 1961, cattle numbers—97.1 million head—are 1% greater than a year earlier.

The Jan. 1 hog census—55.3 million head—is a decline of 6% from the same date last year.

Inventories of all sheep and lambs show a 1% drop from a year earlier.

The chicken count (excluding commercial broilers) on farms Jan. 1 of this year—357,910,000—is off about 3%.

Turkey numbers advanced an estimated 21% from the outset of 1960 to the first day in 1961.

(USDA notes that its Jan. 1 estimates for 1955-60 have been revised on the basis of data from the Census of Agriculture taken in the fall of 1959 and other data which have become available since the original estimates were made.

(Revisions for Jan. 1, 1960, reflect changes made over this 5-year period. Changes from the preliminary 1960 estimates are: All cattle, down 5%; stock sheep, down 2%; hogs and pigs, up 1%; chickens, up 1%, and turkeys, down 1%.)

The inventory report says the Jan. 1, 1961, index of livestock and poultry numbers on farms and ranches (livestock and poultry not on farms excluded) was the same as the revised index for a year earlier but was 8% below the record high index established Jan. 1, 1944.

While the meat animal index (beef cattle, hogs and sheep) was the same as a year earlier, the index for milk cattle (cows, heifers and calves) and the index for poultry each showed a 1% decline from 1960.

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EDITORIAL STAFF—George L. Gates, Editor; Roger Bergiund, Managing Editor; Fred E. Tunks, News Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; James R. Rutter, Russell Tokheim and Paul B. Crockett, Editorial Assistants.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8334.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

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The regional circulation of this issue is concentrated in the southeastern states

Top of the Hopper

THE FEED GRAIN PROPOSALS in Congress are the object of some mighty strong protests from individuals and groups throughout the grain, feed and livestock industries—and well they might be, particularly in the case of the House bill provision which would permit sale of government grain at any price not less than 17% below the support level.

How could normal grain storage and marketing functions operate, or how could anyone take a position in the market, or how could futures markets operate, or how could anyone run a feed or feeding enterprise without any idea of what the government might do to prices from one day to the next?

Many have pointed out that the government could, in effect, become a monopolist in the feed grain business, centralizing all marketing and market strength in the government.

Furthermore, as Truitt Kennedy of the Texas Grain & Feed Assn. put it, ". . . for no stated reason, and perhaps without intent, this proposal would make the CCC, using tax money, the highest price buyer of grain and, through permitting sales at a 17% replacement loss, the lowest price seller of grain. Never before in history has a merchandising organization been given the chance to operate in perpetuity on the basis of a 17% replacement loss."

The feed, poultry, dairy and other industries would face grain prices determined by the action of Washington rather than economic factors, with market prices at 98% of the support level one day and 83% the next.

It's time for persons in the trade to make themselves heard.

SOME INFORMATION OF REAL SIGNIFICANCE to feed men serving the beef cattle industry or feeding animals themselves is found in USDA's annual livestock inventory report. "Nothing in years has so abruptly changed the economic outlook for the cattle industry as the revision of the inventory figures resulting from the new Census of Agriculture," says Dr. Herrell DeGraff, noted Cornell University economist and economic consultant to the American Cattlemens Assn.

The new outlook is that beef production should remain fairly stable for the next two or three years—inching upward, but not much faster than the consuming population will increase. As a result, cattle prices to producers should also hold closely in line with 1960 levels. Underlying this improvement in the outlook compared to what was thought a few months ago is the fact that annual cattle inventories and calf crops have been overstated in recent years. The new Census of Agriculture has resulted in downward revisions in cattle numbers.

Dr. DeGraff said the errors that crept into the annual cattle inventory figures between 1955 and 1960 raise the question of whether the methods of collecting statistics that have worked in the past are adequate for the present, what with agriculture changing so rapidly.

EVERYONE TALKS ABOUT RAPID CHANGES in agriculture, but perhaps not all of us have really been aware of how much change there has been. Dr. DeGraff says he doubts that few persons were prepared for the degree of change which the new Census of Agriculture revealed.

In only five years, 1954-59, the number of farms in the 48 continental states has declined from 4.78 million to 3.7 million—down 1.08 million, or 23%. Even after allowing for the changed census definition of a farm, the number dropped 846,000, or 18%. While this over-all decrease was taking

(Turn to **TOP OF THE HOPPER**, page 101)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed business around the nation this week was sluggish with most of the blame attributed to mild weather in some areas. Attempts to beat indicated price increases due to the $4-5 increase in soybean meal prices were expected to add strength to sales. Millfeed prices also advanced during the week.

In some areas soybean and cottonseed meal were being purchased only on an as-needed basis due to the increase in prices.

In some northern areas sales were spurred by anticipation of country gravel and blacktop road embargoes imposed at the time of spring thaw.

Turkey starter accounted for increased tonnage in some sections while broiler feeds showed strength in a number of areas. Hog feeds also moved well due to anticipated good earnings on hogs. Some feeders were reported to be pushing their hogs for early marketing.

This week's wholesale feedstuff price index was 83.8, an advance of 2.2 points over last week and .6 points over a year earlier. The feed-grain index edged up slightly to 62.7 this week compared to 62.4 last week and 64.0 a year ago. The corn-hog ratio slipped from 16.4 to 16.1. However, it was still 3.5 above the comparable week a year earlier.

Northwest

Formula feed business in the Northwest during the week held mostly steady with the preceding week in volume, reports from manufacturers indicated. However, some reported increased orders attributed to approaching weight embargoes for country gravel and blacktop roads which are imposed each spring.

The month of February, rounded out during the week, was generally a better month for Northwest feed manufacturers than the same month a year earlier. One manufacturer reported business up 35%, mostly attributed to "harder selling."

Hog and poultry feeds were doing well during the week. And, cattle and dairy feeds were also holding up well. Turkey starter sales are advancing with the real push in that area still some time off.

The March outlook is good for most manufacturers with long term bookings and the good hog outlook lending strength. Many hog feeders in the area are expected to push their hogs along for early market.

Prices will move higher due to the $4-5 advance on soybean meal with prices of some firms up $2-3 per ton. High protein feeds are expected to be especially strong.

There is no anticipation of substituting for soybean meal since manufacturers say it is still the cheapest protein available.

Central States

By and large, February volume was relatively satisfactory. While not as good as January, when measured by the same month in other years, it shaped up nicely. Shipping directions are coming in good volume and most of the mills are operating on a full 40-hour week.

So far, there has been no evidence of anything in the way of a seasonal spring pickup. With prices currently somewhat above those at which many buyers booked rather heavily during November and December, it is going to be interesting to note to what degree buyers might be backing away on account of the price factor.

Southwest

Formula feed business was reported to continue at a moderate pace in the southwest. Mixers for the most part reported five day runs with occasional reports of some overtime where a pick-up in demand was noticed on some types of cattle feed.

Increasing ingredient costs on protein meals and carbohydrates have given mixers some concern where they have had to increase prices on formula feeds.

All lines seem to be moving well with special emphasis on certain lines of poultry and cattle feeds. Hog feeds are moving well in some areas and a larger volume of pig feed is moving and sales in this line are expected to expand. The main volume item still continues to be cattle feed with feed lot operations continuing to provide the volume.

While most feed manufacturers expressed optimism about feed business they expect in the coming weeks, they were also concerned that the higher price lists caused by ingredient increases could have a slowing effect on near-term business.

Northeast

February closed out on a definite downturn in sales in the final week, but the month as a whole was about even with a year ago. The trade couldn't pinpoint a reason for the late dip but called it a "quiet period" and looked for an upturn in March. Manufacturers trimmed their running time a little because of the lessened demand.

End products slipped a little. Broilers were off ½¢ lb. in the East and eggs gave ground. But in the western New York area extra large white eggs dropped as much as 5¢ doz. March 1.

Chick and turkey starting feeds are taking a greater share of the sales turnover. But the heaviest tonnage continued to be centered in dairy feeds and egg mashes. Growers have fared very well in the market this year and demand for egg mashes has been and is expected to continue to be good. Broiler feeds, however, remained slow.

Soybeans featured the market this week. But corn also firmed up after some early bearishness based on proposed Washington legislation.

Running time of some formula feed manufacturers declined to 32 hours last week from 36 hours in the previous period.

Southeast

Broiler feed business in the Southeast is reported as being fairly good, with mills running time being about normal. Other feeds are reported as being on the slow side. Southeastern states continue to increase their placements of chicks slightly each week, even though broiler prices dropped 1¢ a pound to 17¢ f.o.b. the farm last week.

Feed manufacturers and growers continue to realize a fair profit. Good supplies of corn and fair demand have

(Turn to **MARKETS**, page 107)

Look for the answer first from Peter Hand Research

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Wiley Akins—Vice Pres. and Gen. Mgr.— Was pres. of two important feed mfg. assns. 25 years' management experience in the feed industry.

Dr. R. A. Rasmussen—V.P., Research Director, Animal Div.—Served on faculty of 3 universities. Degrees in biochemistry and nutrition.

Dr. Myron W. Pasvogel—V. P., Dir. Research, Poultry Div.—Exper. in poultry, feed industries. Former Dir. Poultry Science Dept., U. of Ariz.

John R. Linsner—Dir. Tech. Services—Grad. U. of Ill. College of Agriculture. More than 12 years' exper. in all phases of feed formulation.

Richard W. Kerley—Coordinator of Sales, Production and Procurement. Degree in general agriculture. 12 years' experience in the feed industry.

Gerald J. Anderson—Tech. Services—M. S. degree in poultry nutrition. Was research technician at U. of Idaho and nutritionist in feed industry.

Dr. Heino Naelapaa—Coord. Spec. and Prod.—Was dir. of res. and nutr. in U.S. firms and abroad. Ph.D. nutr. and physiology, Bonn U., Germany.

Richard W. Kelley—Tech. Services—Was research asst. at U. of Mo. and at Kansas State. Master's degree in animal nutr., U. of Missouri.

Problem solving session—A Peter Hand customer (right) meets with Dr. Rasmussen for evaluation of his formulas and to discuss a palatability problem. Standing by is Harry White, Peter Hand Sales Mgr., with more than 20 years' experience in the feed and pharmaceutical fields.

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Egg Set Up 17% Over Year Ago; Placements Of Chicks Up 15%

SALISBURY, MD. — Things are booming in the broiler business. National egg set last week was up 17% over a year ago. Chick placements were up 15% over 1960.

In Delmarva last week the average price paid per pound for broilers was 18.81¢, compared to 18.62¢ a year ago.

For the month of February, Delmarva's average price was 19¢ lb., compared to 18¢ for February, 1960. Broiler feed at $4.63 cwt. was 1% less last month than a year earlier. Broiler chick prices, however, were higher last month, $13 per hundred compared to $11.50 per hundred for February, 1960.

For the 22 reporting states, hatcherymen set 57,054,000 eggs for the week ending with Feb. 25. This was 3% above the previous week. Settings were up from the previous week in 17 of the 22 states. States reporting sizeable increases include Arkansas, Georgia, Alabama, and Mississippi.

Chick placements in the 22 states totaled 39,957,000 chicks—up 1% from the previous week. Increases were reported in 12 states compared with the previous week. States showing appreciable increases included Alabama, Maryland, Georgia, Arkansas, and Mississippi.

Plans for Distillers Feed Meeting Set

CINCINNATI — Plans are all set for the 16th Distillers Feed Conference to be held at the Sheraton-Gibson Hotel here March 8, according to Dr. Lawrence E. Carpenter, executive director of the Distillers Feed Research Council.

Dr. Carpenter says that the program includes a number of speakers all of whom are known for contributions in livestock and poultry nutrition. They will report on research currently being conducted.

Speakers will include: Dr. H. D. Wallace, department of animal husbandry and nutrition, University of Florida; Dr. Philip J. Schaible and Hugh Travis, department of poultry science, Michigan State University; Dr. T. D. Runnels, department of animal and poultry industry, University of Delaware; Dr. E. C. Naber, department of poultry science, Ohio State University; Dr. J. H. Conrad, department of animal science, Purdue University; Dr. N. L. Jacobson, department of animal husbandry, Iowa State University; Dr. M. C. Nesheim, department of poultry husbandry, Cornell University; Dr. J. R. Couch, department of poultry science, Texas A&M College; Dr. E. L. Stephenson, department of animal industry, University of Arkansas, and Dr. W. M. Beeson, department of animal science, Purdue University.

N.W. Feed Men Asked To Donate Blood

MINNEAPOLIS — Northwest feed men are being asked to volunteer to serve as blood donors for an Iowa feed and hatchery man's son who will undergo open heart surgery at the University of Minnesota.

The boy—six-year-old Dwight Winborn, son of Karl Winborn of Winborn Hatchery, Williamsburg, Iowa—will have the surgery for repair of a heart defect some time between March 16 and 27. At least 12 to 15 pints of blood will be needed, and some 30 volunteers are being sought. The boy will need A-positive or A-negative blood.

Persons willing to provide blood are asked to contact Bob Newsome of Newsome Commission Co., FE 2-1529, or Ivan Scanlan, Minnesota Linseed Oil Co., SU 8-9011.

Story of Northern Biochemical Told

By Special Correspondent

OMAHA—The story he was about to tell, said Elliott Roosevelt, was "fantastic in more ways than one."

It concerned the meteoric rise of the Northern Biochemical Corp., Sheldon, Iowa, and its sudden plunge to bankruptcy with discovery of the $2,126,000 embezzlement—largest in the nation's history—at the Sheldon National Bank.

When Mr. Roosevelt sat down 30 minutes later, no one in the audience of 300 in the Omaha Chamber of Commerce dining room cared to dispute his opening remark. The Chamber's Good Fellowship Club, a monthly luncheon group, was the first public audience treated to a first-hand account of the story.

Just 35 days earlier it broke coast-to-coast with the disclosure that Mrs. Burnice Geiger, the bank's assistant cashier and daughter of its president, had been arrested and charged with embezzlement.

Two days later, as rumors persisted that the bank shortage was linked with the sudden affluence of Northern Biochemical (NBC), Mr. Roosevelt arrived on the scene from Denver. He confirmed his link with NBC, said his interest in the matter was as financial advisor to the company and flew off to Washington to attend the inauguration of President Kennedy.

Then NBC president Harold Kistner, Jr., was fired by the directors and the FBI stepped in to charge him with aiding and abetting the embezzler. The charge was later dismissed at a hearing in the Sioux City (Iowa) Federal Building.

Acting Chief

Meanwhile, Mr. Roosevelt returned to Sheldon, met with the NBC directors and emerged to announce his own appointment as acting chief executive officer of NBC. It would be his job, he said then, to try to straighten the company's tangled financial records and, at the same time, keep the firm in business.

Feb. 17 Mrs. Geiger was sentenced to 15 years in prison after pleading guilty to 35 counts.

Those were the principal events leading to Mr. Roosevelt's Omaha speech, with one exception. Short hours before the son of the late President arrived here, federal authorities again arrested Mr. Kistner, this time on charges of using the mails to sell unregistered NBC stock.

The Roosevelt talk was a retracing of these events spiced with his own observations.

He said he was "fascinated" by a company which had started business in November, 1959, with assets of $8,000 and worked its way to where it owed the bank $950,000 in less than 18 months.

Stockholders, he said, received a glowing audit at the annual meeting last Sept. 24 at Sheldon.

But a separate statement on the financial picture of NBC presented Sept. 30 by an Orange City, Iowa, accounting firm, Mr. Roosevelt added, showed NBC "$298,000 overdrawn on the bank." This statement, Mr. Roosevelt said, did not come to his attention until weeks after the NBC bubble burst.

"At this time," Mr. Roosevelt shrugged, "nobody knows the extent of Northern's liabilities or what its true assets are. It's completely impossible to get a clear picture."

Mr. Roosevelt said he has written half of the 500 NBC vendors in the field "and most have replied that we do owe them money."

He said he hoped the vendors "won't be left holding the sack. However, they'll probably have to settle for a percentage of what is coming to them."

Became Interested

Mr. Roosevelt said he first became interested in NBC when he was "invited to a banker's office in Denver last December to meet some people." One of these people was Harold Kistner, Jr.

Mr. Roosevelt left the session "quite impressed" by figures he was shown indicating sales in November, 1960, totaled $198,000.

That same month, he said, he

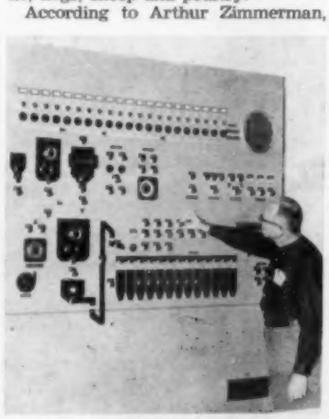
(Turn to BIOCHEMICAL, page 8)

Fasco Mills to Open New Punched Card Controlled Feed Mill

MENDOTA, ILL. — Fasco Mills here is opening a new completely automated $750,000 feed mill. "From receiving to bagging, operations of the mill will be controlled through automatic equipment activated by punched cards," it was noted.

The firm has given the nickname "Fascolossus" to the Richardson electric panel which directs operation of conveyors, gates, scales and mixers in proper sequence for formulation of more than 40 Fasco feeds for cattle, hogs, sheep and poultry.

According to Arthur Zimmerman, veteran feed man and president of the 27-year-old Fasco Mills, the new plant will produce a ton of supplement or complete feed in a fraction of a man-hour. In fact, he commented, only eight persons will be required to operate the mill producing 180 tons per eight hour day.



AT THE CONTROLS — Here company president Art Zimmerman is shown at the electronic control panel of the new Fasco Mills plant at Mendota, Ill.

Nebraska Feed Men To Hold Convention

OMAHA — A panel discussion on "Food and Drug Inspections of Feed Plants" will be one of the features of the 33rd annual convention of the Nebraska Grain & Feed Dealers Assn. to be held at the Sheraton-Fontenelle Hotel here March 7-9.

Moderating the discussion the morning of March 8 will be W. T. Diamond, secretary, American Feed Manufacturers Assn., Chicago. Members of the panel will be: Charles A. Johnson, O. A. Cooper Co., Humboldt, Neb.; Harold Fouts, G. E. Conkey Co., Nebraska City, Neb.; Clarence O'Brien, Crete Mills, Crete, Neb., and Leroy Schilt, Ralston Purina Co., St. Louis.

Chicago Services Held For Jack A. Benjamin

CHICAGO—Funeral services were held here for Jack A. Benjamin, grain executive, broker and civic leader, who died Feb. 27 in Phoeniz, Ariz., where he was vacationing.

Mr. Benjamin was vice president of the Uhlmann Grain Co. and a partner in Uhlmann & Benjamin, securities brokerage, both in the Chicago Board of Trade Building.

Postpone Meeting On Chemical Firm

SHELDON, IOWA — A postponement in the organization of the Sheldon Chemical Co. has been announced by Elliott Roosevelt.

Mr. Roosevelt, chief operating officer of the now defunct Northern Biochemical Co., had announced last week that a meeting would be held this week to organize a successor firm. But, he reported the meeting had to be postponed when he was unable to get a contract signed with Harold Kistner, Sr., father of the former president of Northern Biochemical and head of Bio-Zyme, Inc., Hospers, Iowa, which produced the Actaferm enzyme which Northern Biochemical Co. had purchased for its products.

Mr. Roosevelt said that he anticipated reaching an agreement with Mr. Kistner by the week's end and planned to hold the organizational meeting for the new firm March 7.

Names of the stockholders in the new firm are also expected to be announced at that time.

News of organizing the new firm which would also engage in processing and marketing additives for livestock feed came after steps toward voluntary bankruptcy for Northern Biochemical in the Sioux City court.

Largest stockholder in the bankrupt firm was Mrs. Burnice Geiger, bank embezzler who was sentenced Feb. 17 to 15 years in prison. Authorities have said that $900,000 of the $2 million she admitted taking was traced to the feed additive firm on checks which Mrs. Geiger cashed without funds being on hand.

Shortly after Mrs. Geiger's arrest, Harold Kistner, Jr., president of the firm, was arrested and then freed on charges of aiding and abetting the bank embezzlement.

Feb. 20 he and two other company employees posted bond on charges of violating the Federal Securities Act.

Oklahoma Event to Include Turkey Report

STILLWATER, OKLA.—The Oklahoma Feed Industry Conference and Workshop will include a report on field trials in which market weight turkeys were produced on 2.8 lb. of feed per pound of turkey produced at a feed cost of 11 to 12¢ per pound of bird.

This and other important information will be presented and discussed in workshop sessions which will highlight the conference this year. The conference will be held March 10-11 at Oklahoma State University.

Workshops on ruminant and nonruminant feeding will take up most of the day March 10, with a banquet scheduled for the evening. One of the features Saturday morning, March 11, will be a panel discussion of nutrition and parasitism.

EXTENSION APPROVED

WASHINGTON—The House Interstate and Foreign Commerce Committee this week approved a bill which would extend final effective date of the food additive amendment to the food and drug law from March 6 to June 20, 1962. Administration officials testified in support of the extension. The issue involved is showing of safety in food additives. Testimony revealed that adequate testing under the law could not be completed before the end of the extension period granted.

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Swine and Poultry Talks Included On Montana Conference Program

By ROGER BERGLUND
Feedstuffs Managing Editor

BOZEMAN, MONT. — Efforts are being made to encourage more swine feeding as well as cattle feeding in Montana, and the 1961 Montana Nutrition Conference was not without its discussions of pig feeding and management. Poultry feeding and other livestock developments also received attention at the conference held Feb. 6-7 at Montana State College.

(Also see earlier story on cattle feeding research in the Feb. 18 issue of Feedstuffs.)

The nitrate nitrogen problem in forages was discussed by a Montana scientist as another feature of the two-day program, and current problems in connection with Food and Drug Administration regulations were outlined. Antibiotic potentiation for poultry was among other developments explained.

Following are summaries of reports by Montana State and guest speakers:

SWINE RATIONS IN ALBERTA WITH EMPHASIS ON PRODUCTION OF QUALITY CARCASSES—Dr. J. P. Bowland of the University of Alberta said that a general conclusion from Alberta experiments to date, including some with rations containing up to 30% stabilized fat, is that no fixed energy-protein ratios can be given for swine rations as can be done for rations of some classes of poultry.

A compromise in ration formulation, he said, may be necessary between rations that give maximum gain and feed efficiency and those that give maximum carcass quality. Also, both strain and sex of pigs are important to consider. Market weight is a factor, too, since pigs become fatter as they become heavier, but there appears to be some strain and ration interactions involved here.

Net financial returns should undoubtedly be the final factor in determining an over-all feeding program, and Dr. Bowland pointed out that unless there is a considerable differential in payment for premium carcasses, such as exists in Canada, then rate of gain and feed efficiency become the major criteria of consideration.

Commenting on dilution of rations to improve carcass quality, Dr. Bowland said that on the basis of several years' trials with different types of diluents in finishing rations, the use of 25 to 35% oats, and in some cases home grown hay, seems to be the most useful method of improving carcass quality without lowering efficiency and increasing costs too severely. With the low cost of grain in western Canada, dilution of rations is not generally economically feasible. Moderate restriction of feed intake in finishing pigs so as to make less surplus energy available for fattening seems to offer more promise.

Dr. Bowland told of a restricted feeding experiment with different strains of pigs, using once-a-day feeding, twice-a-day feeding and self-feeding. The twice-a-day system offers some promise, it was indicated; carcass quality and feed efficiency were better than with self-feeding. Dr. Bowland said that this can be done mechanically and that systems will be developed for it. In Europe feed is weighed and is not fed according to appetite.

Dr. Bowland said that free choice feeding has not been too successful, and he feels that a complete ration, where one can accomplish certain things, works out better.

Some feed additives, such as thiouracil, result in leaner carcasses, he continued, but these are not practical. He said that antibiotics in finishing rations in Alberta studies have resulted in fatter carcasses while stimulating rate of gain. Despite this, he said, because of other factors, low levels of antibiotics are recommended.

Dr. Bowland presented formulas for some typical Alberta growing and finishing rations, including combinations of wheat, oats and barley.

PRESENT STATUS OF NITRATE NITROGEN PROBLEM IN FORAGES—Dr. E. E. Frahm of Montana State reviewed a considerable amount of information on this subject. He noted that the college has continued to use 1.5% potassium nitrate as the cutoff point for hays which scientists recommend not feeding to livestock. This has not been considered a rigid division, but the college does feel that hays with concentrations above 2% potassium nitrate should not be fed. Some other colleges differ somewhat from the toxicity range used by Montana.

Dr. Frahm said he believes it is impossible to set arbitrarily an acceptable range which will fit any and all feeding situations, and it is doubtful if additional feeding trials will add much more confidence in present standards.

Dr. Frahm went on to mention the possible vitamin A-nitrate relationship, and he referred to Illinois and Missouri work in which vitamin A and vitamin E deficiencies apparently are associated with use of nitrate nitrogen-containing hays and forages.

Dr. Frahm told of Wyoming work on the relationship between nitrates and varieties and stages of growth of oats. The amount of nitrates accumulated by varieties differed significantly, and there were highly significant differences in nitrate content as influenced by stages of growth. Nitrate

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MONTANA MEETING—A tour of the experimental feedlot facilities of Montana State College was part of the Montana Nutrition Conference at Bozeman. Three of the feed men who visited the feedlot are shown in the first picture. Left to right are James Alfson, City Elevator, Williston, N.D.; Ted Westin, Milk River Elevator, Chinook, Mont., and Harry Johnson, Montana Flour Mills Co., Great Falls.

In the second picture, Ted Walters (right), Midland Feed Co., Billings, Mont., who served the past year as president of the Montana Feed Manufacturers & Dealers Assn., is presenting a plaque to Paul Funk, Montana State student. Mr. Funk is the first recipient of a $100 scholarship to be provided annually by the association for an animal nutrition student. The plaque will carry the names of the award winners.

Honeggers' Sales Up 19%, Net Up 41%

FAIRBURY, ILL. — Honeggers' & Co., Inc., feed, farm building and equipment manufacturer, has reported that sales during the second quarter of its 1960-61 fiscal year were up 19% and net profits increased by 41% over the preceding quarter.

The firm reported October-December sales of $3,848,000, compared to sales of $3,227,000 for the July-September quarter of the firm's fiscal year. Profits were $83,570, compared to $59,376.

Sales for this quarter ending Dec. 31 compared with those for a year earlier ($3,468,000), were up 11% while the recently ended quarter's profits were up 124% from the $37,170 of the previous year. Total six month sales were off slightly in the current six months at $7,075,000 from $7,084,000 a year earlier. Profits for the currently ended six-month period were $142,946 compared to $113,091 for the same period a year earlier. Profits for the first six months of this year are equivalent to 168% of the previous full fiscal year, according to E. F. Dickey, company president. The firm's fiscal year ends June 30.

Mr. Dickey points out that the significant thing about this year's business as compared with last year, at mid-year, is that sales and profits are on the increase at this point, whereas a year ago both sales and profits were on a declining scale. To emphasize this point, he points out that sales for January increased 30% over January a year ago with a corresponding satisfactory profit as opposed to a January loss last year.

Record Profit Likely

While total sales volume for the six months ended Dec. 31 was slightly less than in the previous year, since the upturn did not come until the second quarter, the improved profit picture results from reduced expenses as a result of streamlining operational procedures, Mr. Dickey says. He goes on to say that profits for the full fiscal period ending June 30, 1961, could well be the largest in the company's history.

The company produces animal and poultry feeds with plants at Fairbury, Ill.; Indianola, Iowa; Lincoln, Neb., and Mayfield, Ky. Prefabricated farm buildings are manufactured in plants at Onawa, Iowa, and Fairbury, Ill. Bulk feed tanks, metal grain bins and metal livestock and poultry equipment are manufactured at a steel fabricating plant in Taylorville, Ill.

A new farm buildings manufacturing plant has just been purchased at Fairbury, Ill., in order to expand this phase of the company's business and to improve service to existing customers east of the Mississippi River, Mr. Dickey said.

Honeggers' board of directors announced a 1½% quarterly stock dividend on the common stock of the corporation at a fixed value of $13 per share, with proportional shares payable in cash. This action continued an unbroken chain of 6% per annum dividends, on a quarterly basis, which have been paid since the fiscal year beginning July 1, 1956. Dividends were payable Feb. 28 to stockholders of record Feb. 15.

Pillsbury Co. Opens California Mill

TURLOCK, CAL. — The Pillsbury Co. has opened its new feed mill in Turlock. The mill was recently acquired from Chester Johnson, who formerly operated the Central Valley Hatchery and mill at this location.

Expansion plans were reported under way at present. This will augment the Pillsbury Co.'s present feed coverage in the San Joaquin Valley, which, up to now, has all come from the firm's Reedly mill in Fresno County.

Plans Near Completion For Oregon Group's March 16-17 Meeting

PORTLAND, ORE.—Final preparations for the 30th annual convention of the Oregon Feed & Seed Dealers Assn. are rapidly being completed, according to Hal Hardin, Willis Small Co., Eugene, general chairman.

The annual meeting will be held Thursday and Friday, March 16-17 in the Portland Sheraton Hotel.

No less than 16 guest speakers will address the two-day session, and they will discuss subjects relating to feed, seed, grain, and fertilizer, as well as those of general interest. Among the speakers will be W. T. Diamond, secretary-treasurer of the American Feed Manufacturers Assn., Chicago; and Dr. John F. Cramer, past president of Portland State College.

In addition to the speakers portion of the program, an annual convention business meeting will be conducted Friday morning.

Social functions will commence with a no-host luncheon for men Thursday noon, and a ladies no-host luncheon and bridge party. Thursday evening a men's social hour honoring association officers and the board of governors will be staged at 6 p.m. This will be followed by a social gathering at 9.

On Friday the annual convention sports luncheon will feature Len Cassanova, head football coach at the University of Oregon, as guest speaker. At 5:15 a men's social hour will be staged and this will be followed by the convention banquet and floor show. At the same time, ladies will attend a social hour, style show and banquet. The two groups will join at 9:30 p.m. for a dance.

Fire Hits Madera Milling Feed Plant

MADERA, CAL.—A fire of undetermined origin gutted the Madera Milling Co.'s big feed manufacturing plant on Feb. 25. Early estimates of damage were well over $250,000.

Quick action of firemen saved the PMS (protein molasses supplement) plant, the warehouse, new office and laboratory. The grinders, rollers and other machinery were destroyed.

John Simonet, president of the firm, said the plant was covered by insurance and would be rebuilt immediately.

The firm has other plants and is just starting the alfalfa harvesting season.

The feedlot for sheep was not damaged.

Centennial Nutrition Conference Plans to Get Finishing Touches

KANSAS CITY—Twenty members of the planning committee will attend a meeting in Kansas City March 6-7 to give approval to final plans for the Centennial Nutrition Conference to be held in Kansas City Oct. 23-25. It is sponsored by the Midwest Feed Mfrs. Assn. and the land grant colleges of the midwest area.

The Association of Land Grant Colleges is celebrating the 100th anniversary of the first such institution at the annual meeting in Kansas City preceding the nutrition meeting.

The committee meeting will give the final touches to the program and to the exhibits which are planned for the meeting. Dr. H. L. Wilcke, Ralston Purina Co., St. Louis, is chairman of the planning group.

The program will emphasize the importance of modern agriculture in serving the dietary needs of America and its importance in the current effort to raise the nutritional levels of

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OHIO MEETING SPEAKERS—In the first photo is R. C. Woodworth, Cargill, Inc., Minneapolis, who spoke at the 82nd annual convention of the Ohio Grain & Feed Dealers Assn. in Columbus. His topic was "Government and the Grain Business—New Chapter."

In the second photo is Charles S. Force, Little Bros., Kalamazoo, Mich., president of the Grain & Feed Dealers National Assn., Washington, D C., who spoke on "Launching a Better Agri-Service."

In the third photo is Raymond B. Bohnsack, Farm Bureau Services, Inc., Lansing, Mich., president of the Michigan Grain & Feed Dealers Assn., who discussed "Goal Setting as a Help to Management."

In the fourth photo is Robert L. Skinner, executive secretary of the Western Grain & Feed Assn., Des Moines, who covered the topic "Your Veterinarian Is Important to Your Business."

In the fifth photo is the four-man panel which discussed "The Grain Marketing of the '60's." Left to right, those pictured are: Evans Harrell, Early & Daniel Co., Cincinnati, moderator; O. J. Weiker, Jr., Weiker Grain Co., Van Wert, Ohio; Hugh E. Brubaker, H. E. Brubaker Elevator Co, New Carlisle, Ohio, and Clayton W. Johnson, Mid-States Terminals, Toledo.

In the last photo is Joseph Seabold, Central Soya, Ft. Wayne, Ind., who led the delegates in group singing.

Challenges, Responsibilities Discussed at Ohio Convention

COLUMBUS, OHIO — Ohio Grain & Feed Dealers Assn. members attending the annual convention of the group heard of their challenges and responsibilities as well as the importance of the veterinarian in their businesses.

Nearly 1,000 persons attended the 82nd annual convention of the association at Neil House here. (Also see story in Feedstuffs, Feb. 25, page 1.) Theme for the entire session was "Launching a Better Agri-Service."

In his talk the association president, George G. Moorhead, warned of the challenge of government to take over grain storage and emphasized the necessity of good management ability.

On the subject of storage, he said, "It gives you a peculiar feeling in the pit of your stomach to hear a leading and powerful representative say that if the government can handle grain cheaper than private enterprise, then the government should do it."

He continued, "To the average person that doesn't sound so bad, but the catch is that you or I or no one else could compete with the government when it has no taxes to pay on the physical facilities, no interest on the money required to finance it and on overhead cost. Now if the government were to take over the grain and feed business and gain control of the national food supply, can you imagine how dictatorial that government could become? . If you don't know, then take a look at the country by the name of Russia.

"A moment ago I mentioned government cost of handling grain; how they figure their cost of handling is anybody's guess as we have been trying all year to find out the cost of operating the grain bin sites in Ohio.

"Do you think they will tell their cost? Of course not. It is a secret. This secrecy is carried quite far."

Interest in Politics

Mr. Moorhead said that grain and feed men must take an interest in politics if they want a private grain and feed business in this country.

He urged those attending to write to their congressmen telling them of their problems. He said that representatives in Washington can not be expected to be experts in all the fields they have to deal with. But, he emphasized that these representatives welcome accurate information so that they can be helped in developing the right kinds of bills that will aid business in general.

He commented, "It is true, in the somewhat 'power group government' that we have, that you must be a member of some large group to be heard in Washington.

"But never forget that the real governor of the state, nation or world is public opinion."

Turning to the subject of management, Mr. Moorhead said, "I don't think many of you realize how important management is. Here is a definition for management—Management is the art and science of combining ideas, facilities, processes, materials and people to produce and market a worthwhile product or service successfully.

"Therefore, by this definition, you can see that management is the most important group in America. Management has been able to take the material in this country and make it the greatest. Management is no longer the trial and error method which was used for years. It is now a science due to the rapidly changing conditions."

He emphasized that the change is fast and that management must be alert to handle this change in marketing and services for the future farmer.

Then he advised, "Remember that the aggressive, service minded firm will apply its services so well and efficiently that the demand for its products, information and service will never diminish."

Responsibilities

On the subject of responsibilities, Earl Davidson, West Liberty, Ohio, manager of Craig's Elevator, Inc., told those assembled that they have a unique undertaking ahead of them. That is, he said, "educating the public to the true stature of farmers and of agriculture." The reason is that "we in agri-business sometimes seem to stand alone in realizing that without farmers there is no grain, no feed, no food, no fiber and, in fact, no economy," he continued.

He emphasized that few people realize that modern farming is the nation's biggest industry employing 7.4 million workers—more than the steel industry, more than the auto industry and more than the transportation and public utilities combined.

He said, "Gentlemen, we in our business cannot serve agriculture, and you in the legislature cannot make the proper laws serving agriculture, unless all of us learn to look upon our farmers and upon agribusiness in general as the most important part of our nation's and probably the world's entire economy. Unless each of us assumes our responsibility and absorbs the basic facts we are pointing out today, all the legislative cures for the ills of our economy will fall by the wayside."

He invited his audience to "contrast the steel mills, their unions' long bitter strikes that invited imports, contributed to recession and made all hard goods reach a new high, with the continuous lower cost, no strike farm production record which helped keep our economy hum-

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New Iowa Swine Unit to Be Opened

AMES, IOWA—Iowa State University will open a new growing-finishing swine experiment unit here March 7.

Visitors will be furnished plastic boots at the door to protect the hogs from possible infections on street shoes.

The opening will climax the annual Iowa Swine Production Conference, which is expected to bring more than 1,000 hog producers, feed men and others to the campus. Discussion of the structure will begin at the close of the general conference program.

Half of the feeding floor will be open for the visitors. Hogs will be on feed in the other half. University specialists will point out the building's features.

Officials said the new structure includes equipment for automatic feed handling, grinding and mixing, automatic cleaning and feeding and controlled temperature. The structure is all metal. The floor is concrete with built-in radiant heating pipe controlled separately for each pen.

The building was designed by university agricultural engineers and swine specialists in cooperation with 11 midwestern equipment and other manufacturers.

The growing-finishing building is designed to handle 500 to 600 pigs in confinement from the time they weigh about 40 lb. until they reach market weight. It may be found that an even larger number can be handled, according to Vaughn Speer, in charge of the research farm.

NEW MANAGER

BROOKLYN, IOWA—Wayne Kinnaird is the new manager of the Johnson Feed & Grain Elevator at Brooklyn.

Pfizer Research Conference Set for May 7 in Chicago

NEW YORK — The ninth annual research conference of the agricultural research and development center, Chas. Pfizer & Co., Inc., will be held May 7 at the Conrad Hilton Hotel, Chicago.

Highlighting the one-day affair will be addresses by six outstanding university scientists. As part of an afternoon program, current research findings in agriculture will be summarized on swine, poultry and ruminant nutrition, livestock and poultry diseases, and veterinary medicine.

Covering recent developments in these subject areas will be Dr. R. W. Luecke, department of agricultural chemistry, Michigan State University, on swine nutrition; Dr. E. P. Singsen, poultry science department, University of Connecticut, on poultry nutrition; and Dr. W. H. Hale, animal science department, University of Arizona, on beef nutrition.

New developments in poultry disease research will be presented by Dr. B. S. Pomeroy, division of veterinary bacteriology, University of Minnesota. Dr. C. K. Whitehair, department of veterinary medicine, Michigan State University, will summarize important veterinary medicine research; and Dr. E. F. Bartley, dairy husbandry department, Kansas State University, will report on recent dairy nutrition findings.

In announcing the 1961 program, J. Jerome Thompson, vice president and general manager of Pfizer's agricultural division, said, "The key to whatever strides agriculture will make in the next decade will lie mainly with organized and imagina-

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FDA on GFDNA Program March 22-24

WASHINGTON — Food and Drug Administration regulations and the subsequent responsibilities of feed men will be among the subjects covered by the feed forum at the Grain & Feed Dealers National Assn. convention here March 22-24.

The three-day meeting, which begins on Wednesday, includes a congressional dinner, three educational forums and an array of government and industry speakers. (Also see story in Feedstuffs Feb. 25.)

The feed forum is scheduled for Thursday. The two major speakers will be George Larrick, commissioner of FDA, and Dr. Roland Bethke, vice president in charge of research for Ralston Purina.

Answering questions about FDA will be a panel of four other men including J. Kenneth Kirk, FDA assistant to the commissioner for regulations making; Ralph Kneeland, chief of FDA food branch, Bureau of Enforcement; William Goodrich, chief of FDA general counsel office, and Dr. Charles Durbin, FDA veterinary medical director.

The congressional dinner will be held Thursday evening in the Presidential Ballroom of the Statler-Hilton Hotel.

A recently announced addition to the program is Congressman Walter Judd of Minnesota, who will speak at the Friday noon luncheon. His subject will be "Impact of Foreign Affairs on the Businessman." Dr. Judd is a member of the Committee on Foreign Affairs which has shaped the nation's relief, recovery, rearmament and economic development programs abroad. In the grain and feed industry, he is known for having helped prepare and secure enactment of the measure that later became Public Law 480.

SENATE

(Continued from page 1)

nails down a specific support level for corn for the emergency period of the crop year at $1.20 bu. it would seem reasonable that the bean price could be increased to about $2.16 to maintain the usual relationship which has previously prevailed between the corn and bean loan rates.

In fixing a specific loan level for corn, the Senate Agriculture Committee has declined to depend on oral commitments from USDA. It has long been the policy of the senior chamber committee on agriculture to refuse broad grants of discretionary authority to any USDA secretary and this bill, as reported by the Senate committee, confirms that policy.

Cash Corn Farmer Bounty

Comments from responsible Senate leaders indicate that the administration bill is little more than a bounty for the cash corn farmers, and works to the great disadvantage of the dairymen and poultry industry.

This comment is supported by the fact that while only two members of the committee voted against committee approval of the measure, it is known that six additional committee members, while approving the committee action, reserved the privilege of opposing the bill when it reaches the Senate floor.

There were indications that in order to gain Senate favor, even on the basis of the bill as reported by the Senate committee, it may be necessary for USDA to give assurance of an advance in the market price of manufactured milk, but that does not provide any protection for the poultry industry.

In this connection, it is interesting to recall that when Secretary Freeman appeared before the Senate committee, in hearings on the feed grain bill, he was searchingly questioned by Democratic Senator Herman Talmadge of Georgia, who did not appear entirely satisfied with Mr. Freeman's explanations.

Broad Senate criticism of the measure was to the effect that the measure, as presented to Congress, did not raise the overall farm income, but merely transferred income from the dairy farmers and poultrymen to the cash corn farmers. Ultimately, this source said, it would be passed on to the ultimate consumer.

As the Senate was taking its position on the feed grain bill, the House Rules Committee failed to grant a rule giving the green light to floor consideration of its version of the measure this week, indicating further delay in the House chamber.

Last week the House, in a surprise action, turned down a previous concession by Secretary Freeman when he said he was willing to put a floor under the level at which he would sell corn in the open market, a scheme which he now calls a "nudge" to corn producers to comply with the price support level and withdrawal of feed grains from production.

Not Less Than $1 Bu.

As the House bill now stands, the USDA would have authority to sell corn in the market at not less than $1 bu.

On the Republican side of the House committee, responsible members said that they intended to move to amend the committee bill when it reached the House floor, to strike out the resale provisions of the bill, which would in effect retain the resale provision for Commodity Credit Corp. grain stocks at 105% of the price support level, rather than the "nudge" price that Mr. Freeman would use as a bulldozer over farmers who failed to comply with the recommended acreage cuts.

The failure of the House Rules Committee to grant a rule for clearance of the House committee bill to the floor next week is at best puzzling. The administration has total control over the action of the once powerful rules committee, and the failure of the House leadership to ask for prompt action might indicate that the White House may have lost its original fascination with the Cochrane advice on farm programs, and would prefer to let the issue die without congressional action on the grounds that the failure of Congress to act promptly before corn acreage had been sown, precluded any feed grain program for this year.

In any event, any feed grain bill is now likely to come from Senate sources rather than in the House, and without any shadow of doubt, the Cochrane bill, as sent to Congress, does not meet approval of the Senate and its rejection of the open market sales gimmick, as provided, robs the Cochrane plan of its guts.

PERDUE

(Continued from page 1)

about one tenth of Delmarva's broilers.

Franklin Perdue, president, said that construction of the plant will begin by mid-March. It will be built on the present feed mill site.

"The reason for building this plant," he said, "is basically to reduce the cost to produce a pound of broiler meat through a decrease in the cost of soybean oil meal."

The soybean plant is expected to use from 5,000 to 10,000 bu. of soybeans daily.

The Perdue feed mill will use slightly less than half of the soybean meal produced in the new plant, officials indicated. Production beyond the firm's own needs will depend on outside sales to other feed mills in the area. Only one other plant, that of Townsend, Inc., is in the Delmarva area.

CONCENTRATE

(Continued from page 1)

drug concentrates could be shipped to custom mill or other users, the user who would mix the final feed would have to have a supplemental new drug application.

As pointed out by AFMA, industry feels, however, that such clearance should not be necessary since the health of man or animal would not be endangered. Furthermore, AFMA noted, such drastic controls would be costly, unwieldy and present a very difficult enforcement problem.

The industry group will present data and evidence to support its position. It is hoped that a final decision on the matter can be made by FDA immediately.

PINCH

(Continued from page 1)

proposed by the Kennedy administration, the strong soybean market which also strengthened meal prices and on estimates of poultry and livestock production.

Some tightness on soybean meal supplies can be anticipated, he said. Disappearance of meal was up 8.5% in the first quarter, and January figures on the crush were expected to show another increase. A total crush of 405 to 406 million bushels is expected for the season, but most of the increased production for the year has already been accomplished, and production for the remainder of the season may be close to production in the comparable period a year ago, he said.

Meal and Corn Prices

Mr. Taylor forecast a peak of $70 to $72, bulk, Decatur, for unrestricted meal in April, followed by a moderate downtrend and a slightly higher peak in July. These price levels will attract more cottonseed meal to markets where prices plus shipping costs are competitive with soy, he said.

If the $1.20 bu. support measure for corn is passed, he expects prices will advance to $1.22 to $1.24 bu. by late summer.

Mr. Taylor looks for an improvement in the general economy to become apparent about mid-year, partly as a result of improved retail sales, more government spending and completion of liquidation by the steel industry. The index of industrial production is expected to be up to the January, 1960, peak by next January, he said.

Here is a summary of his analysis of supply and price trends for poultry and livestock:

TURKEYS: Number raised in 1961, 90,500,000, up about 10% from the 82,346,000 raised in 1960. Publication of the intentions report indicating a 20% increase in numbers is expected to reduce the increase. Of the total expected, 10 million will be in light breeds, making up 11% of the total crop. In 1960 12% were light breeds, and in 1959, 19% were light breeds.

Average prices for turkeys in the October-December period are likely to be 22.6 to 23¢ lb.—lower if the production increase exceeds 10%. This compares with an October-December, 1960, average of 26¢ lb.

BROILERS: Production of 1,910 million in 1961, up from the total of 1,818 million in 1960. An 8 to 10% increase in production over a year ago is expected in the spring, but later on the relative increase is expected to be smaller, making for the over-all boost of about 5%.

Prices are likely to be close to last year's price levels for the next couple of months, followed by a slight decline in April, an advance to an average of 17¢ lb. in July and a drop to 16¢ after that.

EGGS: The number of chickens raised in 1961 is estimated at 375 million, compared with 339 million in 1960. This points to a 12% increase in pullets next fall and a 4% increase in egg production next fall. Prices then will decline from fairly good levels through most of the year, but are not likely to get as low as they were in 1959. Potential layers on farms on Jan. 1, 1962, could total 350 million, up about 10 million from January this year. Price troubles for egg producers are indicated for 1962 if this occurs.

HOGS: A 6 to 8% increase in spring pigs is expected because of good hog prices last fall. Prices are expected to advance to $21 to $21.50 cwt. in May and June. Next fall, a drop to around $15 cwt. is expected.

CATTLE: Larger marketings are expected, and weakness will develop in the fall, with choice carcasses likely to bring $23.50 to $24 cwt. in Chicago.

BIOCHEMICAL

(Continued from page 4)

formed the Western Biochemical Corp. at Denver. The firm was to be the western states distributor for NBC, he said.

Later he requested a Dun & Bradstreet report. "The point that impressed me the most was that it showed the firm had $250,000 net assets and the company was known as a quick payer and took advantage of all discounts in paying its bills. We have since wondered who gave the information to Dun & Bradstreet since we are still finding bills for last summer that weren't paid."

Almost from the start of the association, Mr. Roosevelt said he requested a certified audit of NBC books. He was shown statements "but they were never certified," he said.

Prior to going to Washington, Mr. Roosevelt said, he arranged for appointments with various Department of Agriculture officials. "I hoped to get their assistance in testing the NBC feed at various research centers around the nation."

He said he cancelled the appointments when he learned NBC was involved in the bank defalcation.

Belief in Product

Mr. Roosevelt underscored his belief in NBC's animal feed product "as an important contribution to the agricultural community of the U.S. and the world."

He spoke highly of Actaferm, the enzyme which NBC purchased from Bio-Zyme, Inc., Hospers, Iowa, which is headed by Harold Kistner, Sr.

Mr. Roosevelt likened it to "stilbestrol, Aureomycin and Terramycin and the other synthetics used in feeding livestock."

He said it "aids in a more complete digestion and improves the texture of the carcass, whether fowl or livestock, it has less fat and more meat; the rate of gain is more rapid though the intake of feed is less."

Added Mr. Roosevelt, "This product is the first in the enzyme field to have a degree of consistency."

Mr. Roosevelt said he is in the process of forming a new corporation, Sheldon Chemical, to pick up where NBC left off.

Following his talk, however, there was this development: Harold Kistner, Sr., said he had been approached by Mr. Roosevelt on a contract between Sheldon Chemical and Bio-Zyme "but any action is stalemated" by the existing contract between Bio-Zyme and NBC. The matter, he said, is in the hands of lawyers. He said he had considered selling the formula for Actaferm "but that depends on what is offered to me."

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
December 24	1,025	458	756	731	93	678	1,823	1,855
December 31	1,123	462	787	771	65	704	1,940	2,041
January 7	1,168	421	850	696	47	729	1,853	2,111
January 14	1,120	439	778	644	140	756	1,845	2,204
January 21	1,125	589	586	622	51	743	1,899	2,283
January 28	1,143	441	832	596	112	739	1,860	2,299
February 4	1,161	415	878	641	98	921	1,960	2,380
February 11	1,177	524	897	707	106	855	2,070	2,400
February 18	1,185	435	949	765	122	816	2,013	2,220
February 25	1,191	402	956	743	102	767	1,939	2,427

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
December 24	1,096	358	3,122	316	5,716	219	2,865	2,407
December 31	1,069	461	3,150	299	5,875	250	2,956	2,335
January 7	1,062	523	3,357	323	6,286	298	3,099	2,433
January 14	1,072	516	3,386	294	5,996	264	3,295	2,474
January 21	977	517	3,327	332	5,963	255	3,159	2,384
January 28	1,118	406	3,479	297	6,127	256	3,466	2,507
February 4	1,040	375	3,459	290	6,783	270	3,672	2,724
February 11	1,199	369	3,834	400	7,211	260	4,032	3,020
February 18	1,195	462	4,099	395	7,521	238	4,188	2,979
February 25	1,026	529	3,984	422	7,655	223	4,404	3,085

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960-61	Total 22 areas 1959-60
December 24	3,966	416	1,901	228	225	1,352	31,606	25,952
December 31	4,129	474	2,054	260	261	1,229	32,716	31,212
January 7	4,055	442	2,280	325	224	1,226	33,816	32,359
January 14	4,006	433	2,145	307	279	1,284	33,677	32,401
January 21	4,205	464	2,149	308	241	1,224	33,323	32,165
January 28	4,375	498	2,299	289	261	1,218	34,618	33,444
February 4	4,421	507	2,499	345	309	1,310	36,658	34,222
February 11	4,694	496	2,549	359	273	1,293	38,725	34,706
February 18	4,711	501	2,760	373	253	1,377	39,557	34,632
February 25	4,827	556	2,707	352	272	1,388	39,957	34,629

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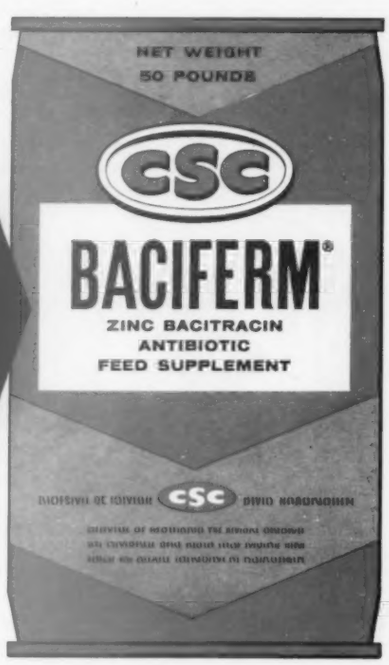

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CONVENTION SPEAKERS—Several of the program participants at the Midwest Feed Manufacturers Assn. convention in Kansas City may be seen in these pictures. In the first photo, left to right, are Kirk Fox, Successful Farming magazine; Maurice Johnson, First National Bank of Kansas City (former feed executive); Don Turnbull, National Egg Council; Frank Frazier, National Broiler Council; Claude Gifford, Farm Journal, and Larry Alley, Pay Way Feed Mills, new Midwest president.

An "Allied Breakfast" was one of the highlights of the meeting this year, and in the second picture are Ralph Everett (left), Empire Sales Training Center, Miami, Fla., who spoke, and Wiley Akins, Peter Hand Foundation, Chicago, who represents allied industry on the Midwest board and who presided at the breakfast gathering.

The "Challenge of Change" was posed by the man in the third photo, Dr. C. B. Ratchford of the University of Missouri, who spoke at the closing luncheon session.

Changes Facing Feed Men, Feeders Spelled Out at Midwest Convention

By MARTIN E. NEWELL and THOMAS E. LETCH
Feedstuffs Staff

KANSAS CITY — Some of the changes and challenges which feed men and their customers face now and in the next few years were outlined by some leading agricultural authorities at the Midwest Feed Manufacturers Assn. convention in Kansas City.

(Also see earlier report on convention in Feedstuffs, Feb. 25.)

Editors of two leading farm publications presented changes and problems as they see them and as they are likely to affect the feed business, and a college leader also spelled out changes which feed men and others serving agriculture will have to meet.

In this era of change, feed men were reminded, too, that their job is cut out for them, that the industry is "now on trial in the eyes of many feeders," that a better job must be done in giving farmers a good image of feed companies and the industry and its values.

Summaries of some of the talks follow:

SELLING FEED AND THE FEED INDUSTRY—The feed industry is on trial now in the eyes of many feeders, and farmers must be given a good image of feed companies and of the feed industry and its values.

This was pointed out by Ralph Everett, Empire Sales Training Center, Miami, Fla., in a presentation which was the feature of the convention's Allied Breakfast.

Actually, said Mr. Everett, feeders are subject to the same factors that motivate consumers—things like security, recognition, etc.—but the value of the industry has not been adequately sold.

Many farmers, he said, are asking themselves what benefits they get from the industry if they are using, say, 200 tons or more of feed per year. He emphasized that individual firms and the industry as a whole must create a good image, must become more sales minded after traditionally being production minded.

Feeders can increasingly obtain the know-how to make their own feed. But, said Mr. Everett, they want and need to be sold on reasons why use of commercial feed is safer, more profitable, etc., and why they can place their trust in the industry.

"Do feeders know why they can now produce a dozen eggs on less than 4 lb. of feed," he asked, "or do they think this just happened? Don't let them forget how the industry has helped make possible feeding accomplishments."

Mr. Everett went on to show how the Midwest association can help individual companies and the feed industry and feeders as he outlined the various association activities and programs—including college relations programs, public relations projects, veterinary-nutrition relationships, the upcoming Centennial Nutrition Conference, help on the Feed Production School, etc.

"Salesmen in the field," Mr. Everett told the feed and allied men, "can be the industry's and the association's best friends and can help through individual and association efforts to develop a better image of the industry, which we must admit is now on trial and must carry its story to feeders."

Wiley Akins of the Peter Hand Foundation, Chicago, who represents allied industry on the Midwest board, pointed out at the breakfast that allied firms have many of the same objectives and problems as feed companies, and he told how allied men can work with the association.

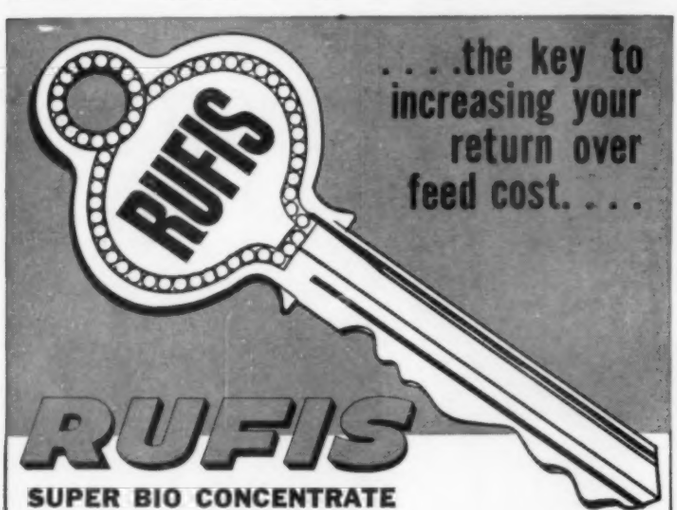
At the conclusion of the session, the association passed a motion to have the president appoint three allied men to work with the director representing allied industry.

MEETING THE PROBLEMS OF A CHANGING AGRICULTURE—Claude Gifford, economics editor of the Farm Journal, discussed four changes in agriculture and their significance. These were: (1) Changes in the size of farms. (2) Changes in the size of the farm market. (3) Changes in farm policy. (4) Changes in farm exports.

Taking a look at the 1959 agricultural census, which has just been summarized, Mr. Gifford made these points:

● A million farmers went out of farming between 1954 and 1959. But 75% of those who went out of farm-

(Turn to MIDWEST, page 93)



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Frank Palmes Ross Sandberg

Oyster Shell Products Appointments Stated

ST. LOUIS — W. J. Westerman, vice president, Southern Industries Corp., has announced the following addition to its sales staff, also changes in sales personnel in the Midwest area of Oyster Shell Products Co.

R. S. Little has been transferred from the midwestern states east of the Mississippi River into the division offices of the company for new duties with Henderson Sugar Co., a subsidiary of Southern Industries Corp.

Frank Palmes, who has been sales representative for Oyster Shell Products Co. in the midwestern states west of the Mississippi River, is being transferred to Mr. Little's territory. Frank Palmes is well known in the feed trade and has represented Oyster Shell Prdoucts Co. for a number of years.

Ross Sandberg of Minneapolis will join Oyster Shell Products Co. sales staff and will be assigned to the area formerly covered by Mr. Palmes.

Mr. Sandberg has had many years of experience in the feed and allied trades. He has served McCabe Grain Co. as manager of its Pacific Grain Co. division, operating a line of grain elevators and feed plants in Minnesota and South Dakota. His last connection was with I. S. Joseph Co., where he established the American feed stores, a franchise plan for the mixer-dealer. He also bought and sold millfeeds and beet pulp. Mr. Sandberg is a graduate of the University of Minnesota. He will continue to make his headquarters in Minneapolis.

Rule on Thyroxine for Sows Being Changed

INDIANAPOLIS — The Food and Drug Administration will be changing its stand on feeding of iodinated casein (thyroxine) to sows so that "it can be fed correctly, which is three days before farrowing and then on through weaning," according to a bulletin issued by Specifide, Inc.

"Although hog feeders have used iodinated casein very effectively in their sow feeds to stimulate milk production, there has been some confusion in the past six months as to legality of the length of time it can be fed," the bulletin said. "It should be fed starting three days before farrowing and continued through weaning age (3 to 5 weeks).

"FDA in a previous stand felt it should be fed from three days before farrowing to only seven days after farrowing. They will be changing this soon. . . .

"In addition to this change in sow feeding recommendations, it is now possible to use iodinated casein in growing-finishing hog feeds at 20 to 40 gm. per ton, or not to exceed 0.01% of iodinated casein or 0.0001% thyroxine."

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1960 Calf Crop 1% Over 1959 Number

WASHINGTON — The 1960 calf crop totaled 39,280,000 head, 1% more than the 1959 crop of 38,938,000 head, according to the calf crop report of the U.S. Department of Agriculture.

The increase in 1960 marked the second year of increase after the 1955-58 downtrend in calf numbers, USDA says. The 1960 calf crop was also 1% above the 1949-58 average of 38,886,000 head. All regions except the south Atlantic showed larger calf crops in 1960, the report shows.

USDA states that the increased calf crop in 1960 compared with the previous year was due primarily to a larger number of cows and heifers on farms. Cows and heifers two years old and older Jan. 1, 1960, totaled 45,871,000 head, compared with 45,244,000 head Jan. 1, 1959, and by Jan. 1 this year the number had increased to 46,275,000.

The number of calves born in 1960, expressed as a per cent of the cows and heifers two years old and older Jan. 1, 1960, 86%, was the same as for 1959 and the 1949-58 average, according to USDA. This percentage is not strictly a calving rate since the Jan. 1 inventory of cows and heifers two years old and older does not include all heifers which gave birth to calves during the year and includes some cows that die or are slaughtered before calving. This percentage is calculated to show trend in productivity over a period of time, and may fluctuate from year to year due to variation in cow slaughter and trends in breeding herd replacement, according to the department.

Wirthmore Sales Event

WALTHAM, MASS.—A series of five regional sales training sessions is being concluded during March by Wirthmore Feeds, Inc., under the direction of Carl E. Abrahamson, director of dairy sales for the firm. The meetings will be held in Lancaster and Tunkhannock, Pa.; Bath and Syracuse, N.Y.; Richmond, Va.; Toledo, Ohio, and Lansing, Mich.

The meetings involve about 60 sales personnel including field men, supervisors and managers of company-owned stores. Topics being presented include: "Preparation for Selling," "Sales Calls That Score," "Selling Ideas — Plans and Programs," "Building Accounts With Potential" and "Merchandising Our Product."

Dannen Mills Post in Denver to Ray Collen

ST. JOSEPH, MO. — Ray Collen, who has been manager at Omaha for Dannen Mills of St. Joseph, is now manager of a new grain and jobbing department in the firm's western division.

Ray Collen

Mr. Collen, who has been with Dannen's for four years, was previously manager of the Bates Grain Co. in Omaha. Prior to that, he operated a feed mill at Malvern, Iowa. The new Dannen department will have its office in the Dannen warehouse on Brighton Boulevard in Denver, according to James Garmon, vice president of the western division.

PEANUT PRODUCTS FIRM

RICHMOND, GA. — Tom Huston Peanut Co., Richmond, has filed articles of incorporation listing 500,000 shares of authorized stock to operate a peanut products business. Wilbur L. Hazlegrove was listed as agent.

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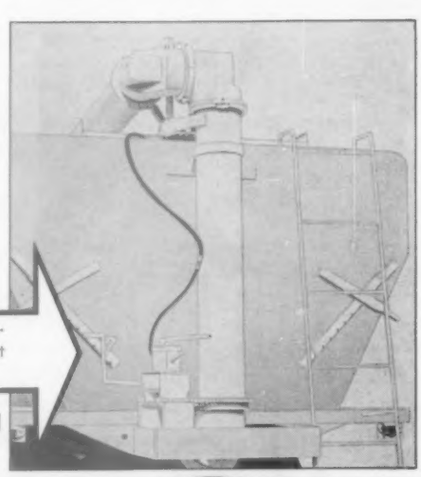

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J. R. LINSNER
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Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

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FDA COMPLIANCE—Compliance with Food and Drug Administration regulations and feed mill sanitation was among the major topics at the Pacific Northwest Feed Mill Production School. Some of the program participants and others in the FDA sessions are pictured here.

In the first photo are Roy Stutzman (left), Morton Chemical Co., Chicago, and Dr. H. S. Wilgus, The Ray Ewing Co., Pasadena, Cal., speakers.

In the second picture are John G. Wilson (left), manager of the Washington State Feed Assn., sponsoring organization, and Robert Wornick, Chas. Pfizer & Co., Inc., Terre Haute, Ind., a panel member.

In the third picture are Bernard Lawson, Globe Feed Mills, Kirkland, Wash.; Walter Krumbholz, Leo Cook Co., Spokane, a speaker, and D. C. Jones, Idaho Egg Producers, Caldwell, Idaho.

Suggestions on Food and Drug Compliance and Mill Operations Offered at Pacific N.W. School

By ROGER BERGLUND
Feedstuffs Managing Editor

BELLINGHAM, WASH. — Just what steps should a feed miller take to comply with Food and Drug regulations? What are some of the things you can do to improve production efficiency in an existing mill? What are important industry trends affecting mill design and operation? How about methods of handling and mixing molasses? What are considerations in air vs. mechanical handling?

These are just some of the questions which were answered in talks and discussions by feed and allied industrymen at the seventh annual Pacific Northwest Feed Mill Production School at the Hotel Leopold in Bellingham.

The school, sponsored by the Washington State Feed Assn. and held just prior to the association convention, attracted some 175 feed men from the Pacific Northwest, California and Canada.

The two-day program, featuring both talks and workshops for informal discussions, covered a good many aspects of feed mill operations. Films, including one on bin flow, as well as talks were among the highlights of the school.

Andy Baardson of Larson & Baardson was general chairman of the school. Dave Kolden of Reid-Strutt Co. was assistant general chairman, and A. W. Wilde of California Pellet Mill Co., coordinated the workshops. (Also see accompanying story.)

Particular attention was given to FDA regulation compliance, but other phases of feed milling also were discussed.

Summaries of some of the talks and discussions follow:

DRUGS, ADDITIVES, THE FDA AND YOU — The various provisions of Food and Drug Administration regulations were reviewed and explained by Dr. H. S. Wilgus of The Ray Ewing Co., Pasadena, Cal. He referred to recent FDA statements (which have been published in Feedstuffs) and pointed out, among other things, that FDA has said that anyone mixing a concentrate containing a new drug into the final feed must have FDA clearance. However, industry representatives are now trying

MILL SCHOOL—Some of those who took part in the program or attended the Pacific Northwest Feed Mill Production School are pictured here. In the first photo, left to right, are Leonard Thompson, Reid-Strutt Co., Portland, and Art Stegner, Butler Mfg. Co., Kansas City, speakers, and K. A. (Skip) Nesseth, The Grange Co., Modesto, Cal.

In the second picture, R. L. Kathe (left), director of public relations, American Feed Manufacturers Assn., Chicago, is showing some points in his public relations discussion to Walter Weber, Grange Co-op Supply, Central Point, Ore.

MOLASSES — Winslow W. Hall (right), Pacific Molasses Co., San Francisco, showed a movie on and discussed molasses handling and mixing at the Pacific Northwest Feed Mill Production School. He is shown discussing the presentation with Harold Herzog, Fisher Flouring Mills Co., Seattle.

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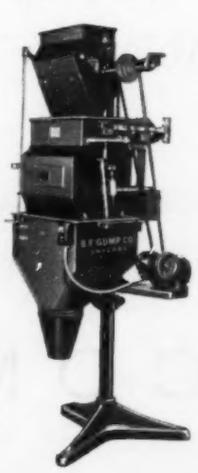

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PACIFIC NORTHWEST SCHOOL—Speakers and others on hand for Pacific Northwest Feed Mill Production School in Bellingham, Wash., are shown in these pictures. Some 175 persons from the Northwest, California and Canada attended the two-day event.

In the first photo, left to right, are M. G. Wire, General Mills, Tacoma; Dave Kolden, Reid-Strutt Co., Portland, assistant chairman of the school; Al White, Bowles-White Co., Seattle, a speaker, and Martin Grasher, Grasher Feed, Custer, Wash.

The second photo shows Andy Baardson, Larson & Baardson, Portland, general chairman; Walter Van Horne, J. W. Feed Co., Burlington, Wash., retiring president of the Washington State Feed Assn.; Jerry Karstens, Feed Age, Chicago, and Tom Burdsal, General Mills, San Francisco, speakers.

In the third picture are Elmer Erxleben, Dairy Cooperative Assn., Portland; Bob Campbell, Leslie Salt Co., Seattle, and A. R. Yurick, Pacific Elevators, Vancouver, B.C., a workshop chairman.

The fourth photo, taken during a coffee break, shows Forrest Larson of Forrest Larson & Associates, Vancouver, Wash.; Martin McGuire, Screw Conveyor Corp., Santa Clara, Cal., and Archie Reid, Reid-Strutt Co., Portland.

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to have this changed. (Also see article by Dr. Wilgus in the Dec. 10 issue of Feedstuffs.)

Dr. Wilgus pointed out that custom-mixed formulas can be provided for under New Drug Applications or Antibiotic Form 10 applications. Considerable latitude in ordinary components may be permitted in such formulas, if covered in the applications. All manufacturing and label requirements must be fulfilled for any custom mixed feed. Mixing feeds to prescription of a vet is permissible if the one doing the mixing has an effective NDA or Form 10 covering such a feed.

In summing up his remarks on who must comply, Dr. Wilgus said: "The manufacturer of the drug substance must have an effective NDA or Form 10 exemption, and usually a food additive order must be published before he can market a new drug. Each person or firm which mixes a new drug into a final feed or into an intermediate mix, such as a premix or concentrate, or who uses such an intermediate mix for making a final feed, must have an appropriate, effective NDA or Form 10."

Dr. Wilgus said that a pressing need of the industry is a concise listing of permissible levels of drugs, singly or in combination, and of the labeling requirements. He said it would seem to be the responsibility of FDA to provide this information. The simplest approach now is to ask the supplier of drug materials to provide the required information.

It was noted that anyone involved in manufacture and use of medicated feeds must possess adequate evidence that he is complying in spirit and in practice as well as possible.

FDA inspectors have generally exhibited an understanding and educational attitude, but an increasingly stern attitude toward unfulfilled good intentions may be expected. Stepped up enforcement is expected soon.

HANDLING DRUGS IN THE MILL — Supplementing Dr. Wilgus' talk was a presentation by Walter Krumbholz of the Leo Cook Co., Spokane. He spelled out some of the details in record keeping and in physical handling and processing of new drug substances under FDA regulations.

Just some of the steps and procedures pointed out by Mr. Krumbholz were these: Make a list of drug substances and other additives being used, classifying each as to whether it is a new drug, old drug, etc. . . . Where required, have in the files an effective NDA or Form 10. Check to see whether you are following the procedures set forth in the application. . . . Note that an old drug or drugs may become a new drug under certain circumstances. . . .

To establish proof of proper usage, there must be records of quantities of drugs received and evidence of how they were used and records of balances on hand. The records can

(Turn to SCHOOL, page 98)

H. E. Willingham Joins Dr. Salsbury's Lab

CHARLES CITY, IOWA—Haskell E. Willingham, a poultry nutritionist from Broken Bow, Okla., has joined Dr. Salsbury's Laboratories, Charles City, in the marketing division. H. G. Bos, vice president in charge of marketing, announced the appointment of the new staff member.

H. E. Willingham

Mr. Willingham will receive his Ph.D. in poultry nutrition from Washington State University this summer. His B.S. degree in poultry husbandry is from Oklahoma A&M and his M.S. degree in poultry nutrition was awarded at Texas A&M.

The nutritionist's Ph.D. dissertation deals with improvement of the feed value of barley for growing poultry. Mr. Willingham's research demonstrated that water-treated, western-grown barley dried in an oven will produce enzymes and antibiotics, improving the feed value of the grain.

Although the water treatment is impractical, the nutritionist's research gave the feed industry a clue to a way to improve western-type barley. Many feed manufacturers now add enzymes and antibiotics to rations containing barley.

NAMED FOR FRANK MORRISON

ITHACA, N.Y. — Cornell University's new animal husbandry building will be named in honor of the late Frank B. Morrison, who is credited with building the department into one of the world's largest and best during the 16 years he was its head. Dr. Morrison, who died in 1958, was author of the book, "Feeds and Feeding." Plans for the new building were started by Dr. Morrison.

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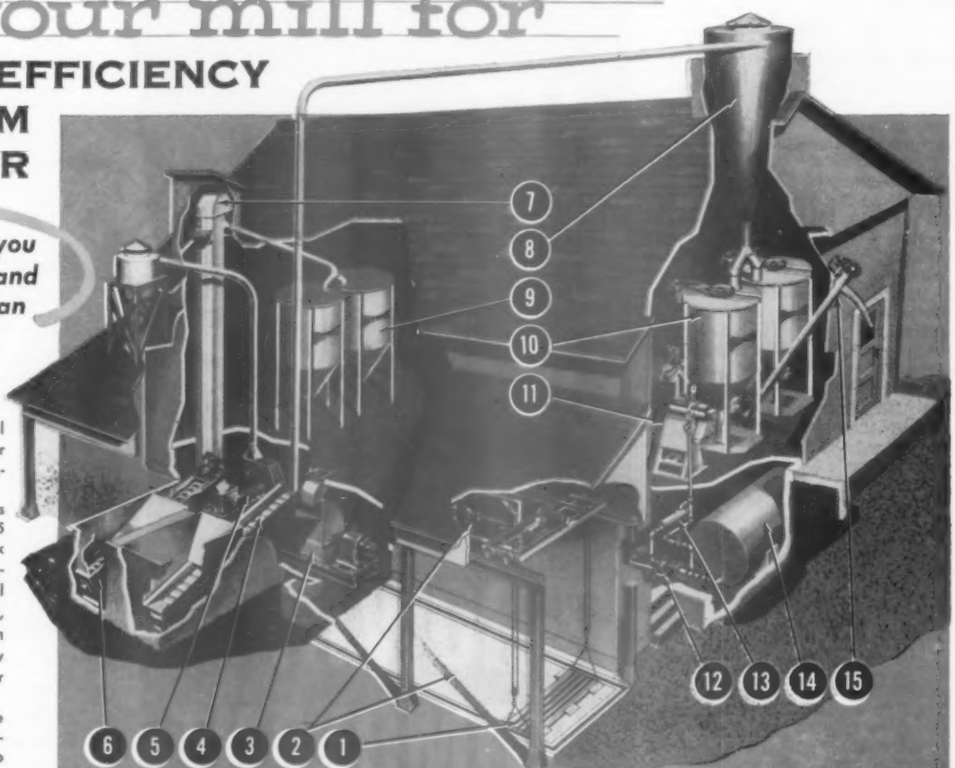

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10. Two Kelly Duplex No. 3 Vertical Feed Mixers
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☐ Corn Sheller with Blowers
☐ Regular Corn Sheller
☐ Pitless Corn Sheller
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Feedstuffs

FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

A Correction

The chairman of the AAFCO States Relations Committee is Parks A. Yeats, director, Seed, Feed and Fertilizer Division, State Department of Agriculture, Oklahoma City, Okla. Henry DeSalvo of Arkansas was incorrectly given this title in this column Feb. 4. My apologies. Questions for discussion at Chicago should go to either Mr. Yeats or Leroy Schilt of Ralston Purina. They are co-chairmen of the meeting scheduled for Monday night, May 8.

Further Corrections Feed Officials' Handbook

Holders of the 1961 annual publication of the AAFCO should make the following changes:

On page 11, the title of "An Act," the fourth and fifth words "Sale and" should be omitted so that this reads "To regulate the distribution of, etc."

On page 12, the last word in the seventh line from the bottom of the page should be changed from "sold" to "distributed" so that the sentence will then read "The name or brand under which the commercial feed is distributed."

On page 13, the seventh line from the top, the word "sold" following the word "products" should be changed to "distributed" so that the expression will then read "products distributed solely as mineral, etc."

In the next paragraph which begins four lines below the correction just indicated as "(4) The common or usual name, etc.," add another sentence after the one presently given to read: "An ingredient statement is not required for single standardized ingredient feeds which are officially defined."

On page 13, "Section 6. Inspection fees," the ninth line in paragraph (a), the fifth word "may" should be changed to "shall" so as to read "that any distributor shall pay an annual registration fee, etc."

On page 15, "Section 11. Detained commercial feeds," the third word in the first line "(a) Withdrawal from 'sale' " should be changed to "distribution" and read "Withdrawal from distribution." Likewise in the sixth line the third word, "sale" should be changed to "distribution" so that this reads "Withdrawal from distribution."

In the index, on page 127, at the top of the page, second column, the word "syrup" has been inadvertently inserted before four terms referring to pages 58 and 59. The word "wheat" should be shown where "syrup" now appears and all four expressions placed in proper order and dropped to the bottom of the column.

The items following the above beginning with the word "Whey" need replacing in the index. The items under "T" on the next page are likewise misplaced.

With the retirement of W. C. Geagley as Chief Chemist of Michigan, his name should be replaced by that of C. Colton Carr. This is on page 107.

Two mailing addresses have been changed on page 110. Tennessee is now Box 9039, Melrose Station, instead of State Office Building. The office has been moved out into the country. Virginia laboratories and offices are now located at 203 N. Governor Street, Room 304. This is around the corner from the former location, not far from another side of the square in downtown Richmond.

Also in the Tennessee listing, add an "e" to the spelling of Holeman.

Question on Microscopy

Among the letters that have come in recently is a question from a feed manufacturer in England. He is interested in "the subject of microscopical detection and examination of ingredients." He asked as to the availability of literature.

The Association of American Feed Microscopists recently published a loose-leaf handbook which brings together the latest suggestions and information in this field. The first attempt at this was prepared some years ago by Canada for use in their Department of Agriculture's laboratories. This was later added to by the Association of American Feed Microscopists and has since been revised and brought out in the present volume.

Copies may be purchased by writing to the secretary-treasurer, G. M. Barnhart, Feed Laboratory, Old Post Office Building, Jefferson City, Mo. The price is $7.50 per copy.

Our questioner further asks about availability of training in this procedure. Anyone interested in this would do well to attend the meeting of the above-mentioned Association of Feed Microscopists in Denver, June 19-24, 1961. Meetings of this association feature a workshop where techniques are studied and compared. This year's meeting has been expanded to include a much longer workshop and training session than usual. This will be divided into a beginners' group and another for more advanced workers. Information with regard to this meeting may also be had by writing to Mr. Barnhart.

Elected President

RUSSELLVILLE, ARK. — Leon Millsap of Danville has been elected president of the newly-organized Arkansas Valley Feed Dealers Assn.

The other officers are John Chamberlain of Clarksville, vice president, and Ed Harms, General Mills, Russellville, secretary-treasurer.

Board members are: Dr. J. N. Thompson, hatchery operator, Pottsville, chairman; Houston Mallett, Morrilton; Jimmy Hamilton, Jack Nelson, Walter Kinslow and Paul Paladino of Russellville, directors.

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HOW SHOULD YOU EVALUATE THE COST OF A GROWTH STIMULANT: BY INITIAL COST, OR BY RESULTS?

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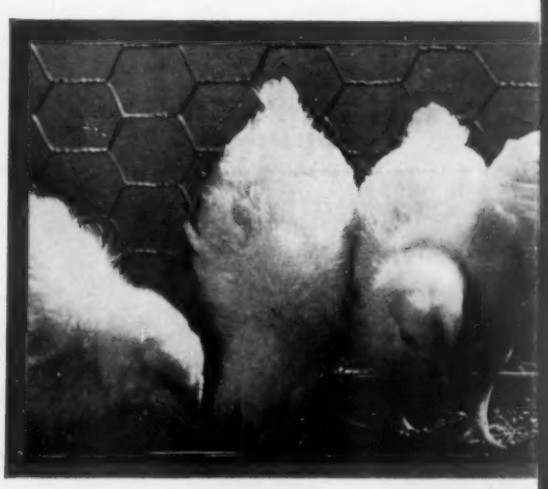
The low-level effectiveness of GALLIMYCIN-10 ... greater marketable weight produced ... plus savings in feed ... all add up to bigger profits. Increased profits from feeds supplemented with GALLIMYCIN-10 have ranged from $29 to $46 per 1,000 birds ... added profits *above* feed and feed additive costs!



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Associated Poultry & Egg Industry Holds Kansas City Meeting

KANSAS CITY—The annual meeting of Associated Poultry & Egg Industries, the super-organization of the poultry industry which is composed of all leading regional and national poultry industry associations, was held in Kansas City recently. This group represents all of the leading poultry interests of the nation.

Action was taken to create a special committee of five members to work with the U.S. Department of Agriculture on matters pertaining to poultry inspection, grading and anything else of common interest to member organizations.

Unanimous approval was given a proposal from one of the member organizations to request a special appropriation of government research funds in amount of $1 million for research in connection with airsacculitis, leucosis, and other diseases and conditions that are causing excessive condemnations of poultry at the time of slaughter. It was reported that the loss to the industry is exceeding $100 million from these causes.

The long-standing policy of Associated opposing mandatory government production controls and price supports was reaffirmed.

After a discussion of news releases regarding recent grants of government funds for research in foreign countries, it was decided an investigation should be made of this matter to determine how many of this type of grants have been made and if these grants are in the best interests of the U.S. poultry industry.

Elect Harold Ford

Harold Ford, executive secretary, Southeastern Poultry & Egg Assn., was elected as the new president of Associated. He replaces M. C. Small, executive secretary, National Turkey Federation, who has served as president for the past two years.

Other officers are Richard Ammon, executive secretary, Northeastern Poultry Producers Council, vice president; Don Turnbull, executive secretary, American Poultry & Hatchery Federation, secretary, and Harold Williams, president of the Institute of American Poultry Industries, treasurer.

Other organizations not mentioned above that make up the membership of Associated Poultry & Egg Industries are: Delmarva Poultry Industries; Chicago Mercantile Exchange; National Broiler Council; National Poultry, Butter & Egg Assn.; National Poultry Producers Federation; North Central States Institute, and Pacific Dairy & Poultry Assn.

NEW VIRGINIA MILL

CHARLOTTESVILLE, VA. — Hatton Grange Mill, Inc., has filed articles of incorporation listing $500,000 authorized capitalization to operate a mill. Joseph W. Richmond was listed as agent.

John Hargreaves Heads Institute of American Poultry Industries

KANSAS CITY — John R. Hargreaves of Caroline Poultry Farms, Inc., Federalsburg, Md., was elected chairman of the board of the Institute of American Poultry Industries at the annual meeting of the board of directors here.

Meeting prior to the opening of the institute's 32nd annual Fact Finding Conference, the directors named Harold M. Williams president.

Other officers elected were M. H. (Bill) Simmons, Siloam Springs, Ark., vice chairman; W. F. Priebe, Jr., Chicago, secretary - treasurer; Opal Ream, Chicago, assistant secretary-treasurer.

Directors

The following directors were elected: Herbert Beyers, Salt Lake City, Utah; G. L. Cagle, Atlanta, Ga.; Harry C. Carbaugh, Chattanooga, Tenn.; Enoch S. Christoffersen, Turlock, Cal.; Oscar A. Day, Chicago; Marshall Durbin, Sr., Birmingham, Ala.; Joseph Fechtel, Dallas, Texas; Charles W. Frank, Sr., New Orleans, and Chester B. Franz, St. Louis.

Also, Mike Hallren, Fairview, Okla.; Mr. Hargreaves; Vic W. Henningsen, Jr., New York; Grant W. Hess, Hemlock, Mich.; Fred Hunt, Seattle, Wash.; Ben C. Iverson, Storm Lake, Iowa; Wallace B. Jerome, Barron, Wis.; Charles R. Lofgren, Chicago; Dean Olson, North Hollywood, Cal.; Earl B. Olson, Willmar, Minn.; E. E. Palmer, Minneapolis; Harry Perry II, Topeka, Kansas; Frank A. Priebe, Chicago; Vic Pringle, Broadway, Va.; Ray G. Purnell, Tupelo, Miss.; Joe Ray, Danville, Ark.; M. H. (Bill) Simmons, Siloam Springs, Ark.; Alton L. Stevens, Waterville, Maine; Harold J. Wendt, Omaha, and Lloyd Woodall, Chicago.

Members of the executive committee elected are: Mr. Hargreaves, Mr. Simmons, Mr. Pringle, Mr. Beyers, Mr. Lofgren, Mr. Carbaugh, Mr. Purnell, and Mr. Day (ex-officio).

S. Howes Co. Names Engineering Director

SILVER CREEK, N.Y.—Raymond L. Wootton has been appointed to the newly-created post of director of sales engineering for the S. Howes Co. in Silver Creek.

R. L. Wootton

Mr. Wootton brings to his new new position a long background in engineering, design and product development. Before joining the S. Howes Co. he served seven years as assistant to the chief engineer at the Aeroglide Corp., Raleigh, N.C. He was previously associated with the General Air Conditioning Co., also of Raleigh, and with Wallace & Tiernan Inc. in Newark, N.J., in engineering capacities.

Mr. Wootton will direct the sales engineering department of the S. Howes Co., and will coordinate operations of the design engineering staff with those of the sales organization, according to Alexis C. Barbeau, Jr., S. Howes president.

New Engineering Show

CHICAGO—Agricultural Engineering Exposition is the name given to a new trade show that will be held in Chicago in conjunction with the 1961 winter meeting of the American Society of Agricultural Engineers.

This display and demonstration of equipment components and new products will occupy the exhibit hall of the Palmer House from Dec. 12-14.

GALLIMYCIN has been proven better

In scientific studies at agricultural colleges and experiment stations, and in tests conducted at Abbott's Research Farm, GALLIMYCIN, used at a level of 5 grams per ton of feed, consistently produced better results.

Growth improvement in flocks fed GALLIMYCIN, based on an average of field trial results, was 5.8%. Yet, it takes *less than 1% improvement in growth to pay for GALLIMYCIN at the recommended level!* GALLIMYCIN-10 increased feed efficiency at the same time, producing greater net gains per pound of feed. In one trial, feed efficiency was 7.4% higher in the flock receiving GALLIMYCIN than in the control flock receiving no growth stimulant.

A 9-week floor pen test at the University of Arkansas, in which GALLIMYCIN was added to feed at a level of 5 grams per ton, produced these results: 190 lb. extra weight per 1,000 birds on 51.4 lb. less feed! These are impressive figures just as they stand, yet the dollar equivalent is even more impressive. Using a broiler market price of 18¢ and a feed cost of 4¢ per pound (exclusive of antibiotic cost), GALLIMYCIN produced $35.45 *extra profit* per 1,000 birds!

In another trial involving 5,300 birds, the average weight of GALLIMYCIN-fed birds at 9 weeks-six days of age was 4.12 lb. Feed conversion in the same test was 2.23.

GALLIMYCIN has been compared with the "older" antibiotics in numerous field trials and has consistently produced better growth responses from less feed. In Utah, the effect of GALLIMYCIN on growth promotion was studied in comparison with five other antibiotics. In these studies, GALLIMYCIN produced greater average weight and better feed conversion efficiency than any of the other antibiotics tested.

GALLIMYCIN-10 has been field tested in every major broiler area in the country. It is effective as a low-level growth stimulant (under practical growing conditions)... stimulating growth at a higher rate of feed efficiency. GALLIMYCIN-10 can be fed continuously, right up to the day of marketing; no withdrawal period is necessary. It's supplied in a free-flowing premix with a soy bean oil meal carrier, manufactured under rigid standards of Abbott quality control. And, GALLIMYCIN-10 carries a 24-month expiration date! GALLIMYCIN-10 is safe... proven; there are no special registration requirements.

It's not what it costs but what it pays that counts!

The higher initial cost of GALLIMYCIN becomes minor when measured against increased weight in marketable birds, plus savings in feed ... for the true cost of an antibiotic feed supplement depends on the results it produces.

Yes, you'll make more dollars with GALLIMYCIN-10 in your broiler feeds. Ask your Abbott man for complete details on what GALLIMYCIN feeding programs can pay you!

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GEORGIA TURKEY PERSONNEL—Speakers pictured here told turkey men attending the Georgia Turkey Assn. annual meeting and the University of Georgia short course, Athens, that more research is needed in the poultry business, in all phases including nutrition, disease, as well as marketing and management. From left, they are: R. C. Scherich, Larro division, General Mills, Charlotte, N.C.; William Griffin, independent turkey buyer, Marshville, N.C.; Dr. B. D. Barnett, head poultry department, Clemson College, and Dr. Clyde Driggers, University of Georgia.

Georgia Speakers Report Growing Need for Expanded Turkey Research

By ROBERT H. BROWN
Special Correspondent

ATHENS, GA.—There is a growing need for more research in many phases of turkey business, both from a production standpoint and marketing. The industry needs to know more about nutrition and diseases and this field has not been explored to the extent that broiler and layer phases of the poultry fields have seen. By the same token, if more turkeys are sold, research is needed to get the birds into homes.

This was the consensus of speakers and others attending the annual turkey short course at the University of Georgia, and the annual meeting of the Georgia Turkey Assn.

In marketing, William Griffin, independent buyer, Marshville, N.C., suggested that extension services and agriculture schools institute some training marketing techniques. The commission merchant, who used to sell turkeys, is dead and today the big chain supermarkets are dominating the buying field. These buyers are smart, and the industry simply must be able to show them how to market turkeys the year around if sales are to increase, he said.

Research is needed in many phases of growing turkeys, said Dr. D. B. Barnett, head of the poultry department, Clemson College, Clemson, S.C.

Feeding in Stages

Feeding in stages, based on ages and sex, has been explored at length by various groups, he said, and feeding formulas in the various stages could stand more definite data.

Some growers have different stages of feeding, adding concentrates to grain, as birds enter one stage from another, especially in older groups. The protein level may vary in different feeding groups.

Dr. Barnett also expressed opinions as to better breeding programs as one of the more important steps for growers. Growers should select such birds as soon as possible and develop a two-stage feeding period for them. In the latter stages, it may not be desirable to continue a high energy diet if they are growing at a reasonable rate and the protein may be reduced as much as 13%.

Dr. Barnett commented on the increasing use of Coastal Bermuda grass as a roughage in the Southeast. Since there is an abundance of this grass in this part of the country, it has many of the values that alfalfa contains. He was speaking of the unpelleted grass. So far, experiments have not been completed on pellets to make recommendations, he said, but he took note of the increasing number of pelleting plants in the Southeast producing Coastal Bermuda.

In producing breeders, he said, there is no objection to fiber content going as high as 16%.

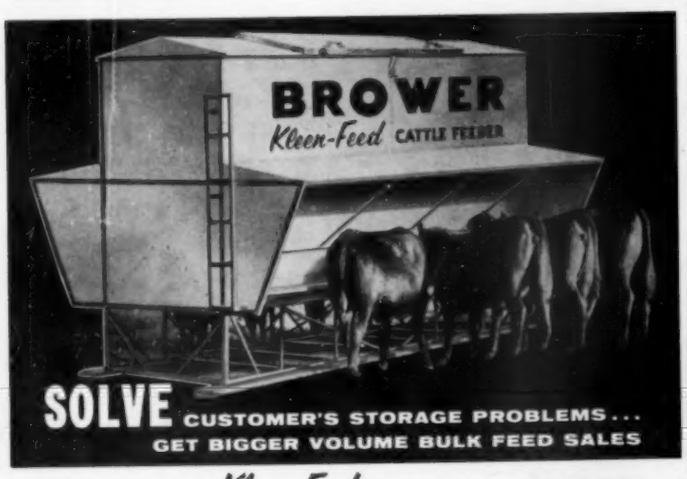
The latter stages of the diet should be well fortified with vitamins, trace minerals and especially vitamin E, he said.

Breeding Diets

In the production of poulting toms, efforts are being made to hold down the size of the birds so that natural mating might be improved. The reduction of the amount of fat will enable toms to perform the natural duties.

"We need to do everything possible to increase natural breeding and less artificial insemination," he said.

More research is needed to determine if the diet has been neglected in males to increase efficiency of mating. There are many opinions on this but few definite facts, he said. Very little is known why some birds



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suddenly become sterile. Further examination is needed.

"We just don't know as much about turkeys as we should. There hasn't been enough research due to the expenses involved in carrying on research," he said.

Aortic hemorrhage is another subject that needs more research. Since turkeys have high blood pressure, it is possible that hemorrhage may be caused by undue stress and then again there is some belief that nutrition may be a factor, he said.

Management

Turkey business, so far as management is concerned, is no different from any other, R. C. Scherich, Larro division, General Mills, Charlotte, N.C., told the growers. It is essential that growers pick the field in which they want to specialize, whether it is as a speculator or a conservative operator, breeder, hatchery, or meat producer, and operate in that field.

"It is a highly competitive business, but so far as we in the South are concerned, what we do in the next three to five years will have very little effect on the market," he said, pointing out that the South is making progress in turkey production.

But he did urge growers to spend a little more money on better housing because it reportedly will pay over the long haul. Growers, generally, are now spending around 40¢ sq. ft. and if they would only spend 15 to 20¢ more and put up houses that would withstand the occasional cold weather, the returns should be greater.

"There are so many generalities in the turkey business that each grower must consider his case individually to determine if he is on the right path management-wise," he said.

Diamond Crystal Salt Has New Trademark

ST. CLAIR, MICH.—A new corporate symbol, designed to provide standard trademark identification on products, advertising, stationery and other printed matter, has been introduced by Diamond Crystal Salt Co., currently celebrating its 75th anniversary year.

Trademark

The symbol was unveiled recently to employees at plants in St. Clair, Akron and Jefferson Island as well as those attending the company's annual sales convention on Grand Bahama Island.

Created by the Chicago design firm of Dickens, Inc., the symbol is an abstract crystal form consisting of six converging diamonds. Five of the diamonds are open and outlined in fire red. The sixth, pointing from crystal center to right, is solid black.

"To us, the multiforms represent the many types of salt we produce for many industries. The solid diamond stands for strength of our management group while the diamonds in outline suggest flexibility. The radiating forms represent our broad geographical coverage, and convergence at the hub symbolizes our close, quick communications system," said Charles F. Moore, president of the company.

H. L. Schonfarber Joins Commercial Solvents

NEW YORK—Hezzie L. Schonfarber has been named a sales representative for the animal nutrition department of Commercial Solvents Corp., according to I. Roy Cohen, sales manager of the department.

H. L. Schonfarber

A native of Louisiana, Mr. Schonfarber received his B.S. in agriculture from the Northeast Louisiana State College at Monroe. Following his graduation, he joined the DeKalb Agricultural Assn. as a research assistant.

Mr. Schonfarber has been assigned to the department's eastern sales district. He will service feed manufacturers in Alabama and southern Georgia on Baciferm, CSC's zinc bacitracin animal feed supplement as well as other CSC products for the feed industry.

George Leitze to Retire From Agricol Corp.

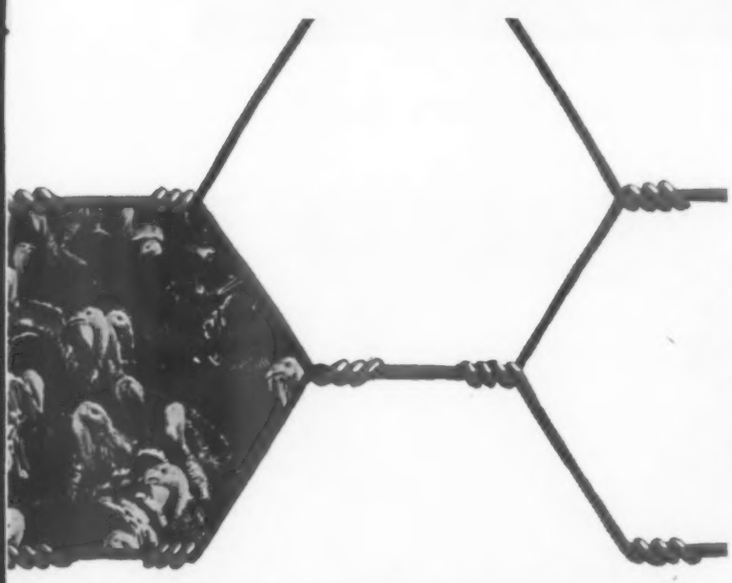
PHILADELPHIA—George L. Leitze, manager for 11 years of Agricol Corp., Inc., Philadelphia, grain and feed jobber and exporter, is retiring from the grain business due to poor health, it was reported.

Mr. Leitze has been in the grain business for 25 years, serving both with Co-op G.L.F. and Southern States Cooperative. After his retirement March 15, Mr. Leitze will move to Huntingdon Valley and serve as general manager of Albidale Farm.

Carl H. Wolf will take over management of Agricol Corp., Inc. He's been assistant manager of the firm for the past eight years.

Leo Becker Plans Mill

BELGRADE, MONT.—Leo Becker has announced plans to establish a feed business to be called Leo Becker Feeds, Inc. He said the firm will build a mill here and make a full line of feeds for the area. Mr. Becker formerly was with the Star-Hi Feed division of the McCabe Co., Minneapolis, and later located in Montana.



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This advertisement appears in the current issues of Broiler Business, Broiler Industry and Broiler Journal.

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USDA Research Shows Millers
How to Reduce Pelleting Costs

By Carl J. Vosloh, Jr.
U.S. Department of Agriculture

WASHINGTON—Is pelleting profitable for feed manufacturers? This question leads directly to several others: How efficient is pelleting equipment? What does the operation generally cost? And what should it cost?

Agricultural Marketing Service economists at the U.S. Department of Agriculture worked out the answers by setting up a model pelleting operation on paper, and by surveying feed producers and feed machinery manufacturers throughout the country.

The AMS model was designed to process approximately 3,900 tons of pellets and 3,900 tons of crumbles a year. It could be operated by one man, the same as a small or medium-sized formula feed plant.

When working at full capacity and with pellets and crumbles selling for $2.50 per ton above the mash price, the plant earned a $1,500 profit.

Operating costs of the model plant were slightly over $18,000. Labor was the largest item—28% of the total. Electricity followed closely, accounting for another 26%.

When the pelleting plant operates at half its annual capacity, labor costs rise to 35% of the total costs. This figure can, however, be lowered if the workman is given something else to do in slack intervals.

The cost of pelleting also includes interest, depreciation, replacement, maintenance, and steam.

In both cost and production, the economists' model compared closely with the average small plant in industry. Small commercial mills in the survey mixed about 11,000 tons of feed a year; the model mill handled 12,000 tons.

Both pelletized about 68% of their total output.

Profit Beyond 6,700 Tons

The model plant required the income from the first 6,700 tons of pelleted output to meet operating costs. Only on the amount over this figure did it make any money from pelleting.

This rule-of-thumb also seems to apply to commercial mills with a one-man pelleting department. Once the 6,700 breakeven point is reached, the operational expenses are met.

So, the most obvious way to reduce per unit pelleting expenses is to increase the proportion of feed that is pelleted, providing these increased sales can be made at the $2.50 extra charge.

A mill processing 8,000 tons of feed a year has to pellet about 83% to meet pelleting expenses (assuming one man spends all of his time in the pelleting operation). But a mill with a 14,000-ton volume requires only 48% to cover its operating expenses.

Another area where most plants can increase their efficiency is in the use of labor. In plants with a volume of 25,000 tons of mixed feed, one man can handle two pelleting units at the same time.

And, regardless of the size of the operation, a properly engineered and designed plant can save money. According to the AMS survey, much of the feed industry's pelleting machinery seemed larger than necessary.

For instance, the AMS model used one 75 h.p. mill, but equivalent plants in the survey used an average of two 50 h.p. and one 30 h.p. mills to achieve the same production.

Boiler equipment also tended to be too large. While the AMS model operated with a boiler capacity of 40 h.p., feed plants of the same size used one or two boilers from 15 to 100 h.p.

Some feed plants went to the opposite extreme; they had too little or too small equipment. Frequently, one scalper instead of two was used to remove the fine material from pellets and crumbles.

Some feed producers also were handicapped by small crumblers. Despite manufacturers' recommendations of a 6 x 60 in. machine, most plants used 6 x 36 in. crumblers.

Other Problems

These were the problems most easily recognized and solved. Several others offer no ready solution. One especially annoying bottleneck is the shortage of bin space. Another is the time it takes to change from one feed formula to another.

The growth of the formula feed industry has been so rapid that efficiencies of operation have not always kept pace. Management sometimes fails to realize that the "efficient plants" of a few years ago are no longer efficient.

To maintain a competitive position in today's feed industry, manufacturers need to employ up-to-date production techniques and equipment, operate at peak efficiency, and keep a constant check on costs and returns.

EDITOR'S NOTE: Carl J. Vosloh, Jr. is an agricultural economist in the marketing economics research division of the Agricultural Marketing Service, U.S. Department of Agriculture. This article is reprinted from the March, 1961 issue of "Agricultural Marketing," a monthly publication of the Agricultural Marketing Service, USDA.

Marcel DeWaele Joins New Century Company

CHICAGO — Marcel H. DeWaele has been named a territory manager for the New Century Co., Chicago, according to announcement by S. E. Shanck, sales manager. He will serve in the firm's northern Illinois territroy.

M. C. DeWaele

Mr. DeWaele has a broad background of experience in the animal health field, having spent several years with the American Cyanamid Co., according to Mr. Shanck.

Named President

ORLANDO, FLA. — Holman R. Cloud has been named president and chairman of the advisory board of directors of Minute Maid, division of the Coca-Cola Co. The latter merged with Minute Maid recently.

Mr. Cloud succeeds John M. Fox, who resigned to become vice president of the United Fruit Co., Boston. He had been executive vice president and a member of the board of Minute Maid since the firm's organization in 1945. Offices will be maintained in Orlando.

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Review of Poultry Management Papers Presented At Southern Ag Workers Meeting in Mississippi

By Dr. J. R. Couch
Texas A&M College

Twenty-two of the 36 papers presented during the Feb. 6-8 annual meeting of the Poultry Section of the Association of Southern Agricultural Workers at the King Edward Hotel in Jackson, Miss., were thought to be of interest to the feed industry and will be reviewed and evaluated in two articles.

This first article in the two-part series covers 10 papers concerned with management practices. The second will include discussions of 10 nutrition papers and two on coccidiosis and coccidiostats.

MANAGEMENT AND FEEDERS—Workers from the Virginia Agricultural Experiment Station, Blacksburg, Va. (W. L. Beane, P. B. Siegel and C. E. Howes), conducted a management study on the effect of using various combinations of feeders on the performance of cross-bred broilers. Average weights and feed conversions were used to evaluate the results.

Feed was supplied in the form of crumbles. The four treatments used were: (1) Tube feeders to 3 weeks and troughs from 3-9 weeks of age, (2) feed troughs to 3 weeks and tube feeders from 3-9 weeks of age, (3) tube feeders from 1-9 weeks of age and (4) feed troughs from 1 to 9 weeks of age.

Feed space allowances with the troughs were 1½ in. per chick up to 3 weeks, and 3 in. per chick thereafter. Tube feeder allotments were three 14½-in. hanging tube feeders per 160 chicks to three weeks, and six similar tube feeders from 3 to 9 weeks of age.

There were no significant differences in body weights irrespective of experimental treatment. The feed conversion figures at 3 weeks of age were significantly better when feed troughs were used. At 6 and 9 weeks of age, treatments 1 and 4 produced significantly better feed conversion than did treatments 2 or 3. It would appear from these data that better feed conversion is obtained with feed troughs than with tube feeders.

A second report on the relative merits of different kinds of feeders for broilers was given from the University of Arkansas (B. N. McPherson, N. R. Gyles and R. M. Smith). Self-feeding hog feeders, circular hanging feeders and trough feeders 4 and 5 ft. in length were compared on the basis of growth rate, feed conversion and man hours required for feeding broilers to 7 and 8 weeks of age.

The amount of feeder space in each instance was comparable with the average recommendations for the type of feeders in question. Two experiments were conducted.

The results of the two tests showed no consistent difference in broiler weights but the feed conversion of broilers where the hanging type feeders were used was the poorest in both tests. It is of interest to note that the same was found to be true in the Virginia report given above where feed conversion figures were better with feed troughs than with tube feeders.

The man hours required for the feeding operations were as follows: Hog feeders, 20; hanging type feeders, 55; 5-ft. trough feeders, 64, and 4-ft. trough feeders, 70 hours to feed 10,000 birds to 8 weeks of age.

It would appear from this report that self feeding hog feeders required much less labor than any of the other feeders used in the test.

Dr. J. R. Couch

AUTHOR—Dr. Couch is a professor in the departments of poultry science and biochemistry and nutrition at Texas A&M College, College Station, Texas.

COOLING POULTRY HOUSES—A report on cooling poultry houses in the Southeast was given by L. N. Drury from the University of Georgia, Athens, Ga.

All poultrymen and feed manufacturers are aware of the fact that the growth of broilers and the egg production of layers are depressed during sustained periods of hot weather. Many chickens have been lost from heat prostration when there are sudden changes from moderate to extremely hot weather.

Procedures used in the study reported consisted of: (1) Exhaust fans, (2) foggers, (3) foggers with exhaust fans, (4) unit evaporative coolers, (5) pad-and-fan coolers and (6) heat pump spot coolers on broilers, light-breed layers and heavy breed layers.

Broiler growth was improved significantly where the birds were evaporatively cooled. Broiler breeder flock hens in fogged pens consistently laid slightly more eggs and suffered less mortality than others maintained under similar conditions but not cooled, although the differences were not statistically significant. Evaporation cooled cage layers tended to lay more eggs than the controls, but the tendency was not consistent in all trials.

POULTRY HOUSES — REFRIGERATION AND VENTILATION—Four types of poultry houses were used in a two-year experiment at the University of Arkansas to investigate the possibility of using mechanical refrigeration and ventilation in poultry houses for broiler production.

The following four types of houses were constructed, each in replicate: Air-conditioned house, fully insulated with solar type construction; fan-ventilated house, fully insulated with solar type construction; natural-ventilated house, with aluminum sides and roofing. The two natural-ventilated houses may be referred to as conventional type of poultry house construction.

Each of the 20 ft. by 20 ft. houses was divided into two equal pens to accommodate an experiment unit of 100 male and 100 female chicks. The houses were located 30 ft. apart in two replicate rows (north and south) of four houses each.

Seven broiler tests were conducted involving 3,200 broilers for each test or a total of 22,400 broilers in all tests. Three tests were conducted in the summer, two in the fall and two in the winter. White Wyandotte chicks were used for the first test. In all other tests, a White Cornish male x White Rock female cross was used.

Broiler Weight—Similar performance was shown between the two mechanical-ventilated houses and between the two natural-ventilated houses. The two mechanical-ventilated houses gave significantly more rapid growth than the two natural-ventilated houses in two out of three summer tests. On the other hand, both fall tests and one winter test indicated significant differences favoring the two natural-ventilated houses. No difference was found between the four houses over the seven tests: Air-conditioned, 2.65; fan-ventilated, 2.65; natural-ventilated, 2.69, and aluminum, 2.67.

Feed Conversion—No significant difference in feed conversion was observed between the four houses in each separate test. However, a slight and consistent advantage of the natural-ventilated, rolled roofing house over the other three houses resulted in a small but significant difference in feed conversions favoring the natural-ventilated, rolled roofing house for the series of seven tests as a whole.

Mortality—Mortality was low in all houses and did not reflect any differences between houses.

The four types of houses exhibited very similar performance on a year round basis. Thus, for broiler production, houses equipped with mechanical-refrigeration and mechanical-ventilation as studied in this experiment would not be justified under conditions prevalent in the northwest Arkansas area.

TROPICAL ENVIRONMENT — The effects of a wet tropical environment upon layers were reported by Dr. J. R. Howse from studies carried out at Trinidad, West Indies. Dr. Howse is presently at Auburn University, Auburn, Ala.

The seasons in Trinidad consist of the dry season which has a low relative humidity from January to May. Humidity during other months of the year is 73% or more.

Chicks used were imported from the U.S. The first group was hatched in late December at the beginning of the dry season, the second in late March near the end of this period and the third in early August when rainfall was most intense.

Chicks hatched in March and reared partially in the wet season were significantly superior during the 500-day egg production period and came into lay at a significantly earlier date. These birds exhibited higher mortality and lower growth rates than those hatched in either the dry or wet season.

Chicks which experienced high humidity from the beginning were not adversely affected with respect to growth but did produce a significantly smaller number of eggs than those used in other treatments. Fertility and hatchability declined and chick mortality increased with the onset of high humidity.

High humidity appeared to have

little adverse effect on growth but tended to depress egg production.

LIGHT MANAGEMENT—The effect of light regime and age on reproduction of turkeys was reported by A. T. Leighton, Jr., from the Poultry Department of the Virginia Agricultural Experiment Station, Blacksburg, Va., on studies carried out at the Minnesota Experiment Station, St. Paul.

Three hundred female turkeys from four different hatches during the spring of 1958 were utilized in the study. Light treatments were initiated on Aug. 22, 1958, and the experiment was terminated April 13, 1959.

Results indicated that restricting light to 6 hours per day for a 2- or 4-week period during the fall and subsequently exposing females to 15-hour lights for the remainder of the breeding season resulted in a significantly earlier age at first egg when compared with unrestricted controls.

True age at sexual maturity as determined by the minimum age at which females could be induced to lay was approximately 200 days of age. Light environment appeared to have little effect on minimum age at which turkeys could be induced to lay.

The use of restricted light for a 2- to 4-week period in the fall increased fall egg production significantly over that of the unrestricted females. However, no significant difference in to-

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tal egg production over a 6-month production period was obtained between light treatment groups utilized in this study.

Under the conditions of this study the use of restricted light to increase the efficiency of producing out of season turkey poults showed considerable promise, particularly when turkey breeder hens are kept for no longer than a five-month production period. The major effect of changing the light environment appeared to be an alteration in time and rapidity of response.

The importance of two light management systems on the production of commercial layers was reported on by the group from Virginia Polytechnic Institute, Blacksburg, Va. (H. S. Siegel and W. L. Beane).

Two commercial egg producing strains were subjected to two light management systems during the growing and laying periods as follows: (1) 6 hour-3% increment—6 hours of daily light until 20 weeks of age, then 3% weekly increments throughout the laying year, (2) 14 hour-3% increment — 14 hours of daily light until the 30th week of egg production (50 weeks of age). At that time, the 6 hour-3% increment groups had reached the 14-hour light level. Both treatment groups were then continued on concurrent 3% weekly increments of light.

Replicated groups were maintained in light-proof, mechanically ventilated floor pens throughout the brooding, rearing and laying periods.

Analyses of the data indicated that:

(1) Up to 8 weeks of age, birds which received 6 hours of daily light were significantly heavier than those which received 14 hours of light per day. Although feed consumption was essentially the same in both groups, feed was more efficiently converted by those receiving the shorter light periods. In contrast, at 20 weeks of age, those that received 14-hour photoperiods were significantly heavier. Earlier sexual maturity of these groups may have accounted for this. One strain was consistently heavier than the other and thus the strain x light treatment interactions were not significant.

(2) Age at first egg and at 50% production were delayed 11 and 9 days, respectively, in the 6 hour-3% increment group as compared to the 14 hour-3% increment group.

(3) Significantly higher egg production was obtained from the 14 hour-3% increment group during the first 16 weeks of production. During the following 8 weeks, production was approximately the same in both groups. For the subsequent 12 weeks, production was significantly higher in the 6 hour-3% increment groups; and, during the final 16 weeks, egg production appeared to be essentially the same in both treatment groups.

(4) Egg weight of the 6 hour-3% increment group was significantly lower than the 14 hour-3% increment group at 26 and 54 weeks of age.

(5) Feed efficiency, calculated as pounds of feed per dozen eggs was consistently better in the 6 hour-3% increment group.

WATER RESTRICTION—Prof. J. G. Goodman, Alabama Agricultural Experiment Station, Auburn, Ala., reported on water restriction and its effects on egg quality, egg size and production.

Cage hens were given limited time to drink water each day during the summer months of 1960. Hens that were allowed to drink water for 5, 10, or 15-minute periods every hour drank nearly as much water and laid as well as hens allowed water all day.

Even those hens limited to one 15-minute period every three hours laid as well as those given water free choice. More severe restrictions of water resulted in a decrease in egg production.

In all restricted pens there were no detrimental effects on egg shell thickness, albumen score or egg size. There was an indication that restricting water increased feed efficiency. Manure from hens given limited quantities of water each day was drier.

Cage layer diarrhea is often quite a problem in the field. The author is not aware of any reports whereby diarrhea has had detrimental effects with regard to egg production, feed conversion or egg quality; however, the condition of the cage house becomes very unattractive and odoriferous when cage diarrhea prevails.

Water restriction has been suggested and used as a means of controlling cage diarrhea. The present report confirms this practice.

It is apparent from the report of Prof. Goodman that severe water restriction results in a decrease in egg production. In the estimation of the writer this is a disadvantage of using water restriction for the control of cage layer diarrhea.

The most effective therapeutic treatment for the control of cage layer diarrhea that the author is aware of is the use of Mycostatin at a level of 100-200 gm. per ton for a period of 7-14 days.

COMB AND WATTLE REMOVAL—The effect of comb and wattle removal on feed conversion and egg traits was the subject of a report given by Dr. P. B. Siegel and W. L. Beane from the Virginia Agricultural Experiment Station, Blacksburg, Va. A study was conducted to determine the influence of dubbing on egg production, feed conversion and other economic traits. Also sought was information on the effect of the presence of the comb and wattles and bird behavior on body temperatures during various seasons of the year.

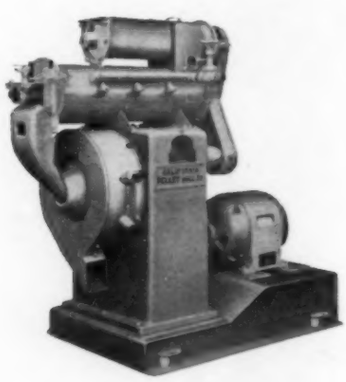
When 154 days of age, 340 commercial Leghorn-type pullets were randomized into four equal subclass groups and housed in floor pens. The combs and wattles were removed from two groups and the other groups served as undubbed controls. Maximum and minimum temperatures were obtained daily in each pen.

All production data, except for feed consumption, were recorded on an individual bird basis and analyzed accordingly. The experiment terminated when the birds were 518 days of age. In addition to these four groups, 12 chickens from the same over-all population were randomly divided into two groups of six birds

(Turn to REVIEW, page 84)

MEMO TO THE SMALLER FEED MANUFACTURER

IF YOU'RE THINKING ABOUT A SINGLE, SMALL PRODUCTION UNIT, ECONOMICAL TO INSTALL AND OPERATE, THE CPM MASTER MODEL PELLET MILL FOR UNDER $4,200* MAY BE JUST YOUR SIZE



CPM makes all sizes of pellet mills for every requirement, with the Master Model specially designed and priced for the smaller operator. It delivers up to 3½ tons of top quality pellets per hour, at lowest cost. Any size or shape. So if you are thinking of pelleting, think CPM—and save. Your phone call or letter will bring full information.

* *A 30 HP unit, complete with base, die and all electrical, ready to run, FOB San Francisco. Every pellet mill installation also requires certain necessary auxiliary equipment. CPM sales representatives are ready to assist you in the planning, layout, startup and any future service needs toward the most efficient, day-in day-out operation of your CPM equipment.*

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1800 Folsom Street, San Francisco 3, California
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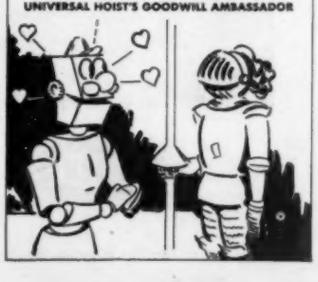
Sales & Service Representatives also in: Aberdeen • Albany • Atlanta • Columbus • Davenport • Denver • Fort Worth Los Angeles • Mexico City • Minneapolis • Nashville • Oklahoma City • Omaha • Richmond • Seattle • St. Louis Toronto • Winnipeg • Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England and Sydney, Australia

"ADVENTURES OF BUCKY ELEVATOR"
UNIVERSAL HOIST'S GOODWILL AMBASSADOR



John Hageman Kenneth Kardux

John Hageman Retires From Richardson Scale

CLIFTON, N. J.—John Hageman, sales representative for Richardson Scale Co. in the Buffalo, N.Y., area, has retired from active service with the company.

He is succeeded by Kenneth Kardux, who will cover the Toronto, Ontario, district in addition to the western New York territory. Mr. Hageman will continue to serve as sales consultant for Richardson in the Buffalo-Toronto area.

Mr. Kardux has been New York district manager for the company since Jan. 1, 1960. He began his career with Richardson as sales engineer, then became district manager for eastern New York state.

California, Arizona Cattle Numbers Told

WASHINGTON—Cattle and calves on feed for market in Arizona and California Feb. 1, 1961, totaled 963,000 head, 5% below Jan. 1, but 16% higher than the 831,000 head on feed in these two states Feb. 1, 1960, reports the U.S. Department of Agriculture.

The USDA reports that Arizona had 292,000 head on feed for market Feb. 1, down 2% from a month earlier, but 18% above the 247,000 on feed a year earlier. Placements of cattle and calves on feed during January totaled 31,000 head, compared with 14,000 head a year ago. Marketings of fed cattle at 37,000 were up 16% from January, 1960.

In California, cattle and calves on feed for market totaled 671,000 head Feb. 1, 1961, down 6% from Jan. 1, but 15% higher than the 585,000 head on feed a year earlier, USDA reports show. Cattle and calves placed on feed during January totaled 117,000 head compared with 65,000 head in January, 1960. Fed cattle marketings from California during January totaled 158,000 head, up 8% from the previous January, it was reported.

Named Sales Manager

NEW YORK—Tom L. Jones has been named sales manager in charge of multiwall bag sales with headquarters in New York, according to Dean Wellington, general sales manager of Gilman Paper Co.

Mr. Jones, formerly a vice president and director of multiwall sales for Arkell & Smiths, was also formerly a special representative for Kraft Bag Corp., the Gilman Paper Co.'s multiwall bag subsidiary.

The Kraft Bag Corp., following a merger Jan. 31, 1961, is now known as the Kraft Bag Division of St. Marys Kraft Corp., a subsidiary of Gilman Paper Co. The merger with St. Marys Kraft Corp. involved no change in manufacturing, administrative or sales personnel.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR YOUR ADDED ZIN-MALS

Feed Firm Publishes New Poultry Manual

CINCINNATI — Flock management, feeding programs and quality egg production, including grading information and marketing tips are topics covered in a new 36-page poultry manual published by the Early & Daniel Co., Cincinnati.

Entitled "Producing Greater Egg Profits," the manual describes three suggested feeding programs, cost control, flock production and quality eggs.

FILE BUSINESS ARTICLES

EPHRATA, WASH.—The Westates Fertilizer & Feed, Inc., Ephrata, has filed articles of incorporation to deal in fertilizers, insecticides, seed and other farm products. Listed as incorporators were Ray Paulson, Rosalia; C. M. Cunningham, Tacoma; and Harrie E. Hill, Ephrata.

Get More of the Mineral Sales Volume in Your Area with

SO-RITE LIVESTOCK MINERALS
For ★ CATTLE ★ HOGS ★ SHEEP
★ HORSES ★ POULTRY

HAVE A COMPLETE PROGRAM
● Complete Line of Formulas for all Livestock and Poultry
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VITAMIN CONCENTRATES
SUPERIOR POTENCIES • LOWER IN PRICE THAN OTHER COMPARABLE PRODUCTS
Select Dealer Territories Available

Write LET US PROVE THE VALUE OF OUR PRODUCT AND PROGRAM
SO-RITE . . . MARSHALLTOWN, IOWA

Not one or two, but

THREE DIFFERENT LINES

keep Peterson Males improving

From the birds at the top of the page comes the fleshing Peterson Crosses are famous for . . . from the line in the middle comes fast, early growth and nickability . . . from the third line comes fertility and hatchability. And we're continually improving all three lines at the same time. We're putting weight on our male at eight weeks as only a hybrid breeding program can. Hatchability in Peterson-mated flocks has never been better . . . in fact, one of our biggest customers regularly reports 82% salable or better! Peterson Crosses are winning contests — like the 14th Maine Broiler Test — as never before and in the field Peterson Crosses are cutting the cost of a pound of broiler meat.

What's more, these Peterson improvements are not limited to a comparative handful of cockerels. We're producing results in volume. We may not always have enough to satisfy the growing demand, but right now is a good time to book the most vigorous, most profitable cockerel you ever housed, today's Peterson Male. Call your Peterson Representative or write us direct. Today.

PETERSON breeding farm
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Peterson MALE

BRANCHES: GUILFORD, CONN., GAINESVILLE, GA. AND THORNTOWN, IND. FOREIGN DISTRIBUTORS: LE FOEIL, FRANCE, BARCELONA, SPAIN, MILAN AND FONZASO, ITALY

Swine Management, Housing Advice Spur Company Feed Sales

By Russell Tokheim
Feedstuffs Staff

A feeder service of swine production advice aimed at bringing management practices and housing facilities up to a par with the development of feed nutrition is boosting swine feed sales for Doughboy Industries, Inc., New Richmond, Wis.

Improving practices of farmers already raising hogs and helping farmers convert from dairying or beef operations to swine are the directions the program takes. Physical facilities for raising the hogs can range from erecting a new building with plans furnished by Doughboy to remodeling existing facilities for the program through specific recommendations from the feed firm.

The program, supervised by Art Greenlee, swine specialist for Doughboy, includes multiple farrowing 6 to 12 times per year, raising hogs in confinement with mechanical feeding and manure-handling equipment, rotational breeding, use of insulated roof and walls plus good ventilation, complete vaccination and disease control program and emphasis upon the nutrient content of the feed rather than upon the listing of ingredients.

Mr. Greenlee reports that the program was not immediately accepted by farmers. There were a good many doubts about the swine specialist's concepts of raising large numbers of pigs in confinement on concrete. And, he readily admits that confinement demands better management.

At the end of the first year with no trouble in confinement raising of hogs, interest in the program took a leap. Now, after over a year and a half and the hazard of having 10,000 visitors troop through the model multiple farrowing unit at the Doughboy Research Farm near New Richmond, there still has been no outbreak of disease, Mr. Greenlee says.

Floors are hosed down by research farm employees, simplifying a big part of the housekeeping job. Manure removal gutters take over from there. Planning of the entire building is for minimum labor requirement.

And, it's all working out so well that the Doughboy swine specialist says he would not change a thing if he were to build the model unit over again.

The building is versatile in that it can be used in three ways: To handle 700-750 hogs a year from farrowing to finishing, (2) as a farrowing building for use in a feeder pig operation farrowing 36 sows every month for 3,200 pigs a year or (3) as a finishing unit for 1,200-1,300 feeder pigs per year.

Also, the plans can be varied in size to give different capacities. And, of course, when the program is adapted to converted buildings, the capacities vary depending on existing space.

Specialization Trend

Thus the model building and adaptation to existing structures is right in line with the trend Mr. Greenlee sees developing—specialization where a farmer either operates a farrowing unit to sell feeder pigs or feeds out pigs for market.

Doughboy's model building is 50 by 121 ft. of metal covered pole type construction with a plastic moisture barrier insulation. The building is divided into three sections: a utility room 15 ft. long, a farrowing-weaning area 30 ft. long and a growing-finishing area 76 ft. long. As sanitation is a vital part of the management program of the company, special emphasis has been given to the barn cleaning facilities.

Alleyway through the building is 10 ft. wide and gutters for the barn cleaner are 12 in. wide with expanded metal coverings. The cement floor slopes ⅛ in. per foot from the outer walls to the alleyway. The gutters at either edge of the alleyway slope ¼ in. per foot to the end of the building. Outside the liquids are absorbed by the sandy soil and solid waste is hauled away in a manure spreader.

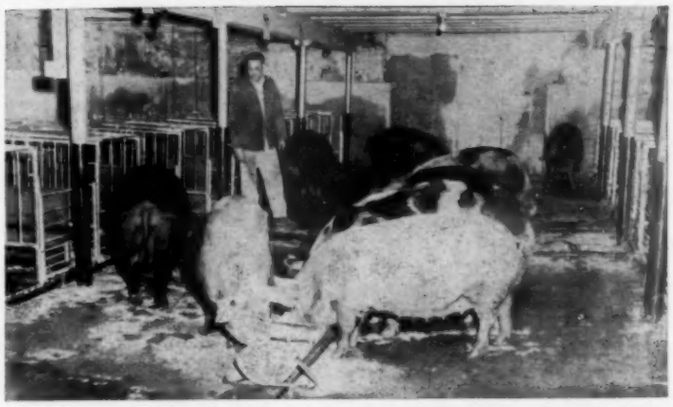
Four thermostatically operated exhaust fans are used for controlling moisture and temperature inside the building. Mr. Greenlee says he has found that a diagonal control arrangement for the fans makes most efficient use of body heat of the pigs and keeps the building warm and dry. Temperatures are kept at 45° in the growing-finishing area and at 65° in the farrowing-weaning area with no auxiliary heat in winter. The swine specialist says that when the 45° reading is increased as much as 5° condensation and dampness occur. He says that pigs are comfortable and do well at these temperatures. The overhead air intakes familiar to poultry houses are not used here since hogs are more susceptible to respiratory diseases caused by a draft on the back than are chickens with their feather protection, Mr. Greenlee says.

Free Choice Feeding

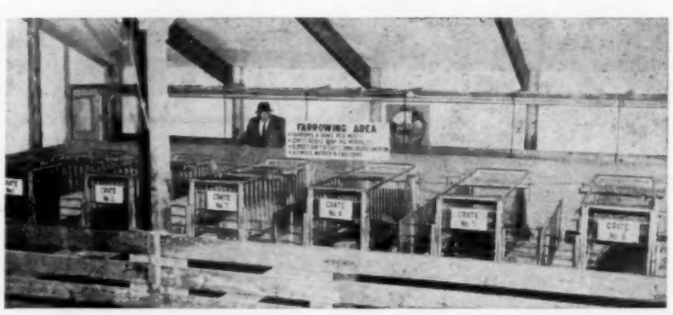
At the research farm, the hogs are fed complete Doughboy feeds through the 125 lb. stage. At that time they are placed on a program of free choice corn and Doughboy Pork-R-535. It is reported that the pigs do a good job of balancing their own ration and have attained records of up to a pound of gain for every 3.06 lb. feed.

Mr. Greenlee says that farmers in the program use both complete feeds and concentrates depending on their own grain supplies. The program is helping Doughboy Feeds set new tonnage records, says Edwin Cashman, company president.

Farmers from a six state area served by the feed division of the diversified Doughboy Industries are currently coming to see the model swine unit at the rate of two bus

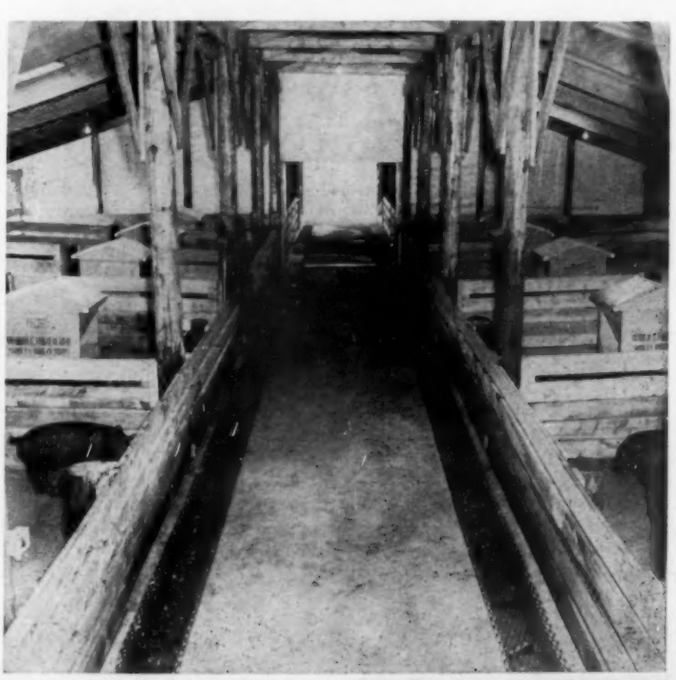


FARROWING BUILDING—Here Bill Schalla of near New Richmond, Wis., feeds sows as he brings them into the new 22-pen farrowing unit for the first time. Mr. Schalla did all the welding and electrical work in setting up the new multiple farrowing system on the farm he and his father operate. The Schallas expect to sell about half of the pigs farrowed here and finish out the other half themselves. One of the younger Mr. Schalla's innovations in the remodeling of the unit is a homemade electrically operated door at the loading end of the building.

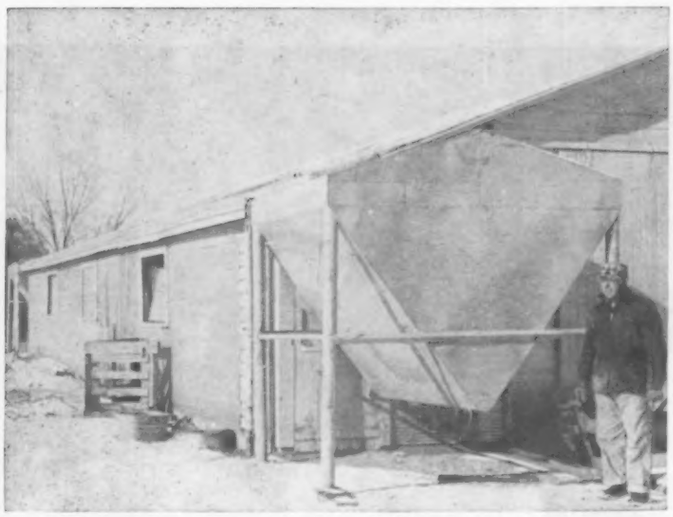


FARROWING AREA—Shown here is the farrowing area of the model swine unit at Doughboy's research facility. Checking over the six farrowing crates is Art Greenlee, swine specialist for the feed firm.

FATHER-SON TEAM—Here father and son, William F. Schalla and Bill Schalla, are shown outside the two buildings used in their swine production program. The building in the foreground, a former steer shed, has become the growing-finishing unit and the lower level of the old dairy barn in the background has become a farrowing-weaning unit. The Schallas are doing all the work of converting the two buildings themselves.



GROWING-FINISHING AREA — This photo shows the growing-finishing area of the model swine building at the Doughboy Research Farm near New Richmond, Wis. At either edge of the alleyway through the pole-type structure are manure removal gutters.



REMODELED CORN CRIB—This swine growing-finishing unit was formerly a double corn crib and just a year ago housed 4,500 bu. corn. Here, farm owner Archie Carlson is shown beside one of two bulk bins for the automatic feeder system.

loads per day Monday through Thursday.

The stream of visitors started in October and will continue through April, according to Mr. Cashman. Tours to the research farms are organized by Doughboy dealers and salesmen.

Doughboy officials report that dairy farmers are showing a great interest in the program. Of particular appeal to them is the limited time a swine unit of this type is said to require. Art Greenlee says that three hours per day should be the maximum time required.

And, the swine specialist says that the model building costing $13,500 is now returning $5,000 per year. At this point, when guiding a group of farmers through the building, he asks how many of them can afford not to have such a unit when they have hundreds to thousands of dollars invested in pieces of farm machinery which may be usable only a few days to a few weeks per year.

Wisconsin, Minnesota and Iowa farmers have built 14 new buildings like the research farm model and so many farmers have remodeled or are remodeling dairy barns or other buildings according to Mr. Greenlee's recommendations that Doughboy officials have lost track of numbers.

Unusual Buildings Used

Probably the most unusual converted multiple farrowing unit is a former potato cellar on a farm near Cambridge, Minn. Now porkers are being farrowed in the heavy concrete underground structure that Doughboy spokesmen say would also make an excellent bomb shelter.

Not only are there unusual types of buildings being put to use for raising swine, but the program itself is unusual in this time of increasing contract farming. There is no contract involved in the program. Doughboy provides swine management advice and will also finance the feed and half the cost of feeder pigs up to a maximum of $5 each, supervise purchase of equipment needed for the operation and give assistance on feeding programs and medication.

Feeders in a farrowing operation buy their own purebred boars and Mr. Greenlee places a great deal of emphasis on purebred boars for success in an operation. Many of them come from testing stations.

The largest swine producing unit now in operation under the program is a 3,000 pig unit near Ellendale, Minn., according to Mr. Greenlee. And, while he smiles about the growth of the program so far, he says he can see no limit to its future possibilities.

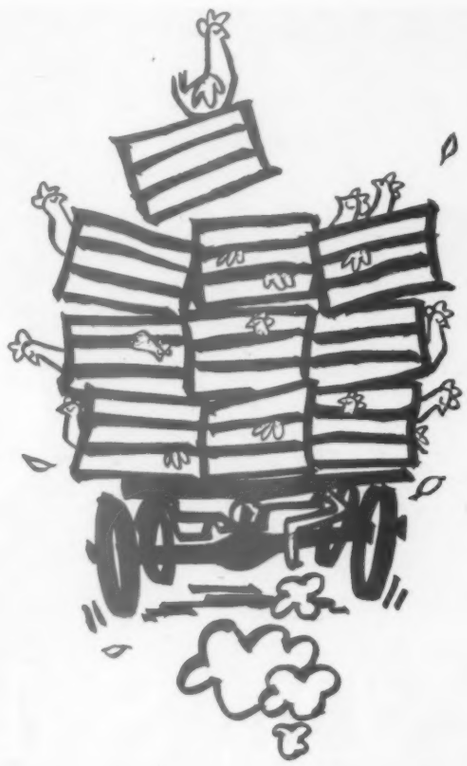
But, a word of caution goes to persons before they go into the program. "You must like pigs," he says, "to go into the program."

Farrowing Every Month

Doughboy's Research Farm model swine unit is operated on the basis of 700 hogs per year with six sows farrowing every month to attain the goal. Those in charge figure that it

(Turn to page 34)

DISCUSSING OPERATIONS—Discussing operation of the newly remodeled growing-finishing house are Art Greenlee, Doughboy swine specialist, left, and owner Archie Carlson, right. The former corn crib on the Carlson farm is now used for 170 hogs in the growing and finishing stages. Mr. Carlson uses a former chicken house for a farrowing-weaning unit.



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Fortify your feed with

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KINGSPORT, TENNESSEE, subsidiary of EASTMAN KODAK COMPANY

FROM POULT

Dr. Salsbury's *Two-Stage* Turkey Medication Program

Polystat® first, then Histostat®-50 in your turkey feeds

1 - POLYSTAT® *protects poultry against coccidiosis, large roundworms, tapeworms, bluecomb, and hexamitiasis.*

Your customers can start poults faster, start them healthier, grow them stronger. During this period in a turkey's " span of life, " Dr. Salsbury's Polystat is the additive that gives your turkey feeds the profit-making extras turkey raisers want—more gain, less feed used per pound of gain.

Polystat in the feed means a healthier flock. It protects against many diseases and parasites. Birds don't suffer the setbacks that go with these diseases. Polystat is a money-saving, trouble-stalling additive for turkey feeds. You can forget about putting a separate wormer, a separate growth stimulant, and a separate coccidiostat in your feeds. Polystat does the job of all three.

Used from the start, Polystat is the additive that carries poults through many of the worst early troubles—and keeps them gaining fast. Make sure it's in your feeds if you want well-satisfied customers.

MORE THAN PRODUCTS —

helps your customers keep their birds disease-free

2 • HISTOSTAT®-50 *prevents blackhead, improves finish.*

Tests prove that during the range phase of a turkey's " span of life," Dr. Salsbury's Histostat-50 scores highest in weight gain, feed efficiency, fleshing, and blackhead prevention. The 1959 Turkey Disease Control Report,published by the University of Minnesota, summarizes research showing that Histostat-50 prevents blackhead best. Histostat-fed birds had **better fleshing,** they were best in **feed efficiency** among all commercially available compounds tested, and Histostat-50 birds had the **highest average weights** in the test. These are profit-building extras your feeds can provide. Last year more turkeys were fed on Histostat-50 than ever before—and with a high degree of profit as a result. This year, more millions—yes millions! —of turkeys will be protected with Histostat-50. See that it's in your feeds. Write, wire, or phone for complete information.

Dr. SALSBURY'S LABORATORIES
Charles City Iowa

— A SYMBOL OF SERVICE

takes 164 days to bring a hog to 220 lb. weight and they have been getting over-all conversion rates of 315 lb. feed per 100 lb. gain.

Rate of gain is checked as each pig is weighed every Friday following weaning.

The farrowing area of the building is 20 by 30 ft. with six farrowing crates with space for pigs from each litter along the sides. There is also a pre-creep feeding pen with a heat lamp for each litter. Attesting to the prevention of pig losses in the system, Art Greenlee says that only four pigs have been lost from overlay in 19 months.

There is also a 10 by 30 ft. sow feeding-exercise area. Sows are released from the crates a half hour morning and afternoon the first week and an hour during the next two weeks.

There are three weaning pens in this section of the building with sleeping sections boarded off for ease of handling pigs when they are castrated and vaccinated for cholera. Heat lamps are used in the winter.

Each half of the growing-finishing portion of the model building has six pens 10 by 20 ft. Pigs come to these pans from the weaning area and are rotated according to stages of growth until they reach 125 lb.

The barn cleaning unit is used only in this area so that waste from older pigs is not carried into the farrowing-weaning area to reduce the risk of disease among the baby pigs.

The last minute finishing pen in the building has a door to the loading chute.

Outdoor facilities include four pens for brood sows and two other pens for boars and gilts. In this area the feeder is 90 ft. from the waterer to encourage sows to exercise.

One of the remodeled facilities just completed for a multiple farrowing operation is a former double corn crib on the Archie E. Carlson farm 11 miles northwest of New Richmond. Last year at this time there were 4,500 bu. shelled corn in the structure. Now, it's a growing-finishing unit with a 170 head capacity. The farrowing-weaning unit is a former chicken house.

Mr. Carlson until last August was in the dairy business with 40 cows on milk and 100 head of heifers and replacement cows. He had raised 300 hogs per year since 1947. Now he is equipped to handle 600 hogs per year through a $5,000 investment in some remodeling of existing buildings. His 550-acre farm is devoted to corn, hay and oats and he admits he's pretty strong in the corn now. He uses Doughboy concentrates with his own grain for the swine operation.

The corn crib remodeling involved straightening the slanted sides of the 28 by 64 ft. crib, installing sheet metal on the outside, insulating with a moisture barrier on the inside, installation of automatic feeding system and installation of two thermostatically controlled fans to keep temperatures at 45°. With the diagonal placement of the thermostats, warm air is drawn across the building to get maximum usage of the heat.

Mr. Carlson had two 125 bu. bulk bins custom built so he could use his automatic unloading wagon in hauling the feed to the swine unit.

$7,000 Investment

On another farm, closer to New Richmond, a dairy barn has become a farrowing house and a concrete block steer shed has become a growing-finishing unit. Operators, a father and son, William F. Schalla and William (Bill) Schalla, estimate their remodeling work, which they are doing themselves, will cost $7,000.

The lower level of the old dairy barn now contains 22 farrowing stalls, a holding pen and washing pen with a system of gates for controlling the animals, designed and welded by Bill Schalla who is employed by Doughboy's mechanical division in New Richmond. Waste gutters slope to the center of the building and into a pit which will have an outside manhole and loading equipment.

The old milk house, attached to the barn, has been turned into an office for the operation. Because the old dairy barn's lower level is of heavy concrete, a gas fired heating unit has been suspended from the ceiling to provide extra heat for keeping moisture from collecting on the walls. This father and son swine raising team is also planning to install a heater in the concrete block growing-finishing unit.

Capacity of the remodeled barn farrowing-weaning unit is expected to be 300 every other month as compared with 200-300 per year formerly raised. Now, the Schallas are planning to sell about half their 300 feeder pigs and finish out the remainder themselves. They use Doughboy concentrate with grains raised on their 160 acre farm and are also trying free choice feeding with the pigs they are finishing now.

Poultry Group Opens Membership Drive

DECATUR, GA. — The Southeastern Poultry & Egg Assn. has opened its 1961 membership effort, according to Norman Sanders, Columbia, S.C., president of the organization.

"At a time when the industry's voice must be heard if the industry is to remain strong," Mr. Sanders stated, "it is vital to all of us that we maintain a strong industry organization.

"Southeastern has increased its services greatly over the past few years and as industry needs appear, these will be met with the necessary services," he pointed out.

FEED MAN DIES

CULVER CITY, CAL. — Funeral services for William Lloyd Vaughn, 72, feed and grain store owner, were conducted here recently. Mr. Vaughn is survived by his wife, Dorothy; a son, Robert, and a granddaughter, Patricia Vaughn.

"NOTHING BUT ARBOR ACRES 50'S ...our records show they're easier to grow"

When important broiler men get together these days the Arbor Acres 50 is likely to get the best of it. With good reason. If you have an integrated operation to manage, you want to be able to depend on basic performance factors like livability. You *can* with the "50" . . . crossbred vigor makes this active bird live better on range *and* in the laying house, even under difficult conditions. Its offspring convert the added vigor into faster growth and fewer condemnations. Best of all, nothing was sacrificed to provide this better meat performance . . . the "50" lays better and produces a higher percentage of salable chicks!

Anybody with enough birds can select for meat, but it takes a real breeding program to develop a broiler female that's better in *every* way. Arbor Acres has that program and the bird to show for it. So many broiler men agree, better order now to be sure of the dates you want.

Arbor Acres
GLASTONBURY, CONN.

You can also order Arbor Acres 50's from:

Concord, N. C. • Springdale, Ark. • Blairsville, Ga. • Tenaha, Tex. • Carthage, Miss. • Dahlonega, Ga.
San Luis Obispo, Cal. • Albertville, Ala. • Thorntown, Ind. • Skowhegan, Me. • Aprilia, Italy

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Complete accuracy in Molasses mixing bag after bag! One mixer For All Your Mixing Needs. Mixes Bo' s Dry and Molasses Feed.
SEND FOR FREE LITERATURE:
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WORRIED

about CRD, synovitis, condemnations?

You can reduce broiler condemnation risk

What is a reasonable condemnation rate? To find out, the University of Maryland and the University of Delaware studied 61 flocks (nearly one million birds) from hatchery to processing line.

Only about one-fifth of these flocks had less than 1% condemnations! Two-fifths had 2% rejects or less. On the other hand, one-third of the flock owners had more than 4% of their birds turned down . . . and 10% losses were suffered in 13% of the flocks!

Condemned birds were valued at 60¢. On this basis, a loss rate of 5% costs $600 for every 20,000 birds marketed . . . or $2,400 for four 20,000-bird batches.

What can you do about condemnation losses? First, let's review . . .

What causes condemnations?

Many factors can influence reject rate to some extent. But a University of Delaware scientist says "chronic respiratory disease is the most frequent disease cause for condemnation."

And Georgia poultry scientists add that adverse weather or environmental conditions can make the problem worse. The Georgia group concludes: "Control of respiratory diseases will be necessary to reduce broiler condemnations, and improved environmental conditions are necessary to minimize respiratory diseases."

What can you do?

There is a simple, effective way to counteract the effects of many environmental and weather-caused stresses . . . to prevent constant disease drag and intestinal troubles that in turn make birds far more susceptible to CRD and other serious diseases. The answer is nf-180 protective feeding.

Wide-range protection

The drug nf-180 is particularly well-suited for protecting broilers. First, it is effective against an extremely wide range of diseases. In fact, *nf-180 prevents and controls more broiler diseases than any other drug.* It is the first drug many men turn to when trouble strikes.

Second, nf-180 is safe and nontoxic — no withdrawal period is required. It can be fed right up to marketing, thus helping you protect your birds during the critical finishing period. The end results are fewer condemned birds, faster gains, more profit.

How do you know nf-180 will work for you? Actually, you don't until you try it!

But a recent study of the daily records of a large processing plant in the South showed that, for most growers . . .

nf-180 effectively reduces condemnations

This study was conducted during early summer when condemnations ordinarily are not as serious as in winter. In fact, broilers not receiving nf-180 averaged only 2.93% rejects, the worst flock showing 6.16% loss.

But even here, where condemnations would not seem to be much of a problem, nf-180 showed considerable effectiveness! It cut the already-low condemnation rate by more than half . . . down to just 1.09%. The highest condemnation rate of any flock on nf-180 was 1.35%.

Even more important, nf-180 returned $33.88 per thousand birds, *over and above the cost of the drug,* when all benefits were figured. So nf-180 does not squeeze already-tight margins . . . it actually *widens* your profit margin!

How to use nf-180

Only you can decide how to use nf-180 most effectively to handle your own particular problems. Here are ideas other broilermen have found effective:

To reduce early chick losses: start your chicks on nf-180 medicated feed to provide 100 grams furazolidone per ton. Feed 1 lb. of this ration per chick (about 3 weeks).

For vaccination and other stresses: use an nf-180 medicated booster feed (100-200 grams furazolidone) for 7 to 14 days. Trials indicate feeding nf-180 at least 7 days prior to vaccination reduces outbreaks of CRD and other respiratory troubles.

To reduce condemnations and improve finish: feed 50 grams furazolidone per ton from the 6th week until marketing. nf-180 protects against CRD, synovitis, enteritis and other serious troubles.

Try nf-180. Compare growth, feed conversion, mortality and condemnations with previous flocks. You'll probably find the reduced number of rejects, alone, more than pays for nf-180.

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NT-6-10

Nebraska Speaker Urges Turkeymen to 'Produce to Market'

GRAND ISLAND, NEB.—A prediction that tomorrow's successful turkeyman will "know his market and produce to it" was made here by William B. Palm, Jr., Nutrena Mills turkey feed sales manager, Minneapolis.

"There is a desperate need in our industry for birds tailored to modern-day markets," he said. "As yet, however, far too few producers either can or will meet that need."

Mr. Palm, addressing the annual Nebraska Turkey Federation convention here, said the "turkey marketing gap" of recent years had brought into being controversial contract production programs in which processors have bought control of their customers' output.

"When the food industry lays down its specifications, someone—if not a turkeyman, then the food industry itself—is going to meet them," he said.

Mr. Palm described contract production as "probably the least understood and most feared phrase in animal agriculture."

He said that while the program's failures sometimes created resentment and bitterness, there are "remarkable successes in which contractors and producers have worked together for mutual good and profit."

Widespread Contracting

Mr. Palm predicted that contract production would become more widespread in the future, but called on the NTF "not to resent the fact, but rather to concentrate your efforts in turning the situation into an advantage."

The independent turkey producer who wants to maintain his status can avoid contract-imposed restrictions in several ways, Mr. Palm said.

"Successful, independent turkeymen are almost without exception efficient and business-minded," he said. "They have skill and experience. They have sufficient capital to weather unexpected lows and to buy or invest when the time is right. They have a sizeable operation or are in the process of expanding.

"But most important, they know their market. They have learned first-hand what their market needs, when it is needed and the size and quality that brings them the best price."

GRAIN SUFFOCATION

ATCHISON, KANSAS—Elmer Lassen, 21, an employee of the C.G.F. grain terminal here, was killed when trapped under an avalanche of wheat in a 450,000-bu. metal storage bin. Mr. Lassen and two other employees were pushing grain toward an auger in the center of the bin when the grain shifted, burying Mr. Lassen.

Arkansas Egg Firm Sets 85% Production Goal for Its Layers

LITTLE ROCK — The Arkansas Egg Farm, Inc., here has set a high goal for its hens: 85% production.

The 30,000 Hy-Line layers reached 80% production recently when one day's output exceeded 23,000 eggs. But officials of the new firm believe they can bring production up to 85%.

Hillman Koen, general manager, said the firm plans to triple the number of layers eventually — bringing the total hens in production to some 90,000.

"More and more eggs consumed in Arkansas and Little Rock are being produced here," he noted. He attributed the increased in-state production to an egg law which provides inspection and grading standards for eggs marketed at retail.

He said Arkansas was no longer "an egg dumping ground."

Left Broiler Production

Parent firm of Arkansas Egg Farms, Inc., is the Darragh Co., a feed concern headquartered here. Darragh Co. entered the egg field some months ago after leaving broiler production.

The firm invested considerable research in its operation. Layers were moved into three modern buildings last October. In one building, with slat floors, birds are alloted 8/10 sq. ft., while 2.4 sq. ft. are provided for those in the other two houses.

Mr. Koen said the production record of the hens in the concentrated area has not been up to that of the layers in the other buildings. Records are maintained on a pen basis and each pen has 250 layers.

Under construction at the present time is a building to house the processing plant of the Arkansas Egg Co., marketing branch of the concern.

Feed consumption at the farm is high. Mr. Koen said the layers in each house eat 12,000 lb. of feed every five days. This is almost 1,300 tons of feed a year.

The firm, for accounting procedures, depreciates each hen monthly. Officials say this is done so that when the flocks are sold, their salvage value and their book value will be almost equal.

George Morgan Joins Arbor Acres Farm

GLASTONBURY, CONN. — According to a recent announcement by G. E. Coleman, Jr. of Arbor Acres Farm, Inc., Glastonbury, George Morgan has been named sales and service representative covering western portions of North and South Carolina, eastern Tennessee, and sections of Virginia and West Virginia. Mr. Morgan was formerly associated with the feed division of the Early & Daniel Co., Cincinnati, Ohio, and at one time worked for the Earle-Chesterfield Mill Co. of Asheville, N.C.

George Morgan

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Carey Ev'r-Flo Salt was developed to insure efficient uniform mixing of salt *in any weather, under any conditions.* Carey uses a special process and a special additive — which has been designated FL9 — to coat each grain of salt.

FL9 makes *each grain* of salt moisture-resistant — and assures maximum flowability in any weather, under any conditions. Flowability is the key to making sure that salt is mixed into feeds accurately, and efficiently.

Feed mixers throughout the Carey service area have found Carey Ev'r-Flo to be the best salt ever manufactured for mixing purposes. Their experience proves Carey Ev'r-Flo helps reduce labor costs, unloading time and storage requirements, for handling salt in modern feed plants. But most importantly, Ev'r-Flo eliminates operating and feed quality problems caused by ordinary salt.

Carey Ev'r-Flo does the job you want salt to do because it is the first salt ever developed exclusively for feed mixing efficiency.

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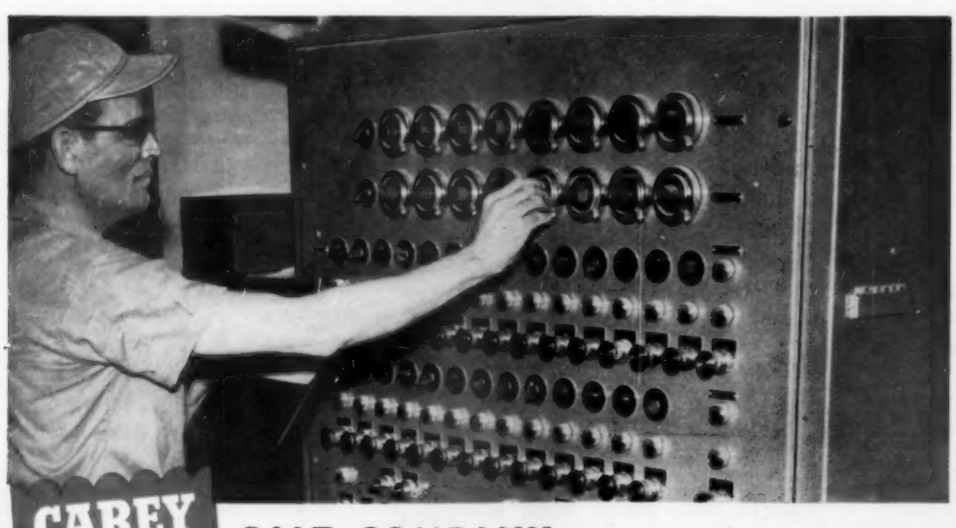
Contact your nearest Carey District office for information about Carey's exclusive 40 ton money back guarantee. Or write, Ev'r-Flo, The Carey Salt Company, Hutchinson, Kansas.



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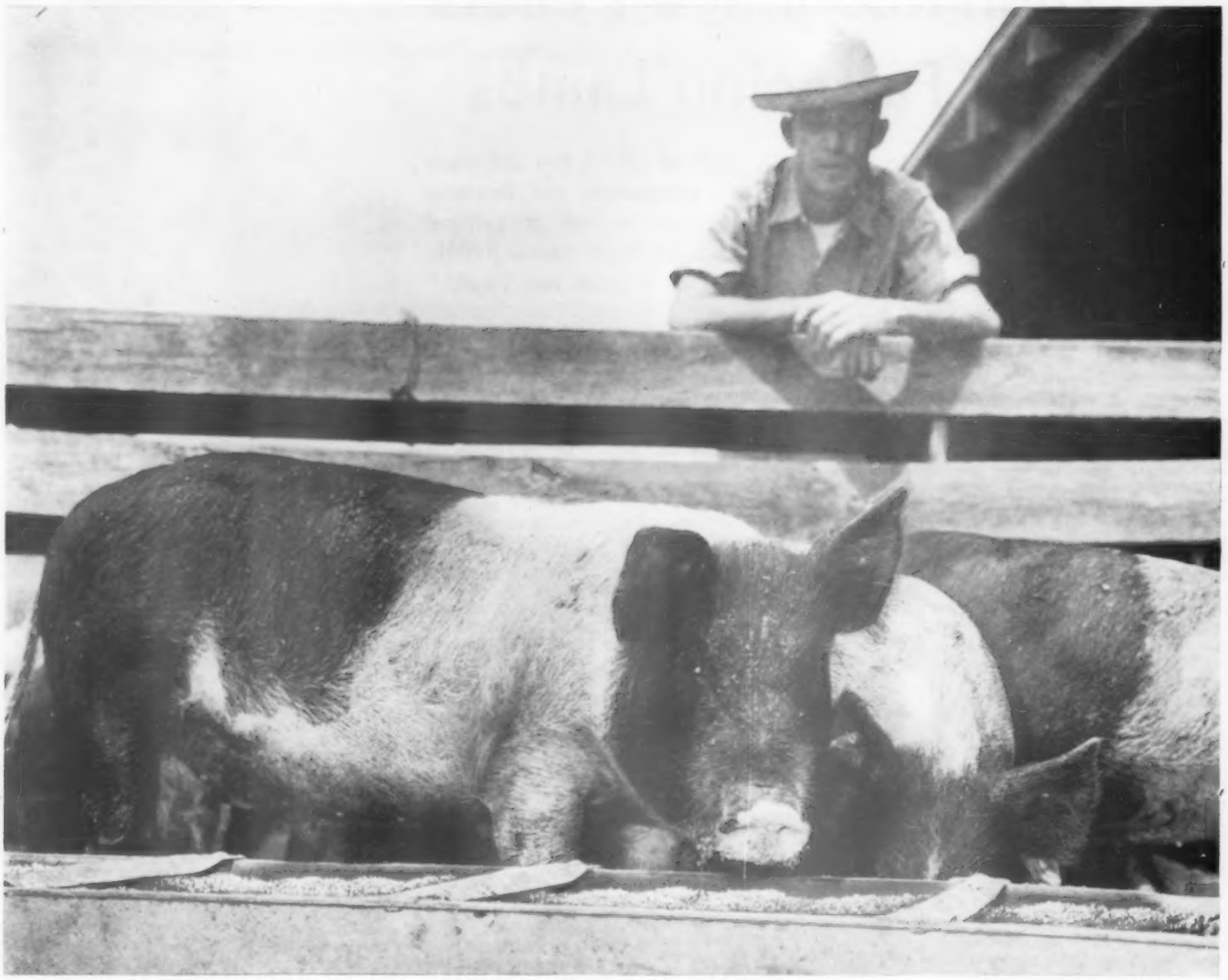

How many bites go to his worms?

"Most hogs that might be called normal and healthy experience a 7 to 10% feed loss in nourishing worms of various kinds . . . in spite of being treated for worms once, or even twice, with purge-type wormers."

DR. A. C. TODD
VETERINARY PARASITOLOGIST
UNIVERSITY OF WISCONSIN

The experts have pretty well proved that swine worms siphon off 7 to 10% of your hog feed. What does this mean to you? Well, say it takes you three pounds of feed to make a pound of pork . . . or, 600 lbs. of feed to get a pig to 200 lbs. Taking the low figure of a 7% feed loss from worms, it means you're losing 42 lbs. of feed per pig . . . over two tons of feed for every hundred hogs!

The only way you can stop this constant loss . . . continuously . . . is with Hygromix-fortified feeds. Hygromix not only kills three kinds of worms, but it also stops their reproduction. Thirteen college tests prove it really works . . . gave them 8.1% more daily gain on 5.7% less feed.* Another good thing about Hygromix: your hogs worm themselves with each bite!

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High-Roughage Pellets For Fattening Lambs

"Lambs appear to do equally well on all of the different sizes of pellets which have been compared; the fineness of roughage grind does not appear to be a critical problem, with the possible exception that some pellets high in alfalfa may have the hay ground too finely."

By Dr. D. C. Church
Oregon State College

The use of completely pelleted, high-roughage rations for fattening lambs has been of considerable interest to livestock feeders and to the feed industry since the early publications on the subject from the New Mexico station by Neale[1] in 1953. Since that time many state experiment stations, private companies and feeders have been experimenting with pelleted feeds for lambs. Consequently, a considerable amount of information has been accumulated since 1953, although the subject certainly has not been exhausted from a research point of view.

The merits of using completely pelleted feeds have been well advertised in most articles dealing with the subject. The most striking example is the increased rate of gain reported when lambs are fed similar rations pelleted and unpelleted. Increased gains have been reported that ranged from negative values to over 50%. Average figures, however, would generally fall within the range of 20 to 25% improvement. These increased gains are nearly always associated with an increased feed intake and an improved feed conversion, although exceptions to either of these trends have been noted. The magnitude of the response is, in general, inversely related to the quality of the ingredients from which the pellet is formulated, since it has been reported on several occasions that high quality ingredients such as corn and alfalfa hay benefit much less from pelleting than rations which include poor quality hays or roughage such as corn cobs, etc. This is especially true when a high-concentrate formula is pelleted since such rations have not shown any consistent improvement in gains, although feed conversion may be improved moderately (for the sake of clarity in this article, I am arbitrarily calling pellets "high roughage" when roughage makes up 55% or more of the formula).

FREE FROM DIGESTIVE DISTURBANCES—In addition to the likelihood of increased gains and improved feed conversion from feeding high-roughage pellets, probably the greatest advantages to the feeder are the speed and ease with which lambs can be put on full feed and the freedom from digestive disturbances and enterotoxemia. Numerous experiments in Oregon and elsewhere have shown that range lambs which have had no previous feed except grass can be given unlimited access to pellets with a minimum of digestive disturbances and that lambs so managed will be consuming maximum quantities within a few days. This point especially applies to pellets containing 70% and upwards of roughage. In lambs fed at the Oregon Station at Corvallis during the last three years on high-roughage pellets, only one lamb has died of causes which could be attributed to enterotoxemia. In addition, other disturbances such as diarrhea have not been a consistent problem except for a few days after initiation of feeding. Usually, within 10 days to two weeks all lambs will be producing normally formed feces. In any case, diarrhea will rarely affect a high percentage of the lambs on feed.

Perhaps one other advantage to be obtained from the use of high-roughage pellets that is not apparent should be mentioned. This is the opportunity to increase the intake of low quality feed by lambs, resulting in lower cost formulas in some instances. Hays and other roughages of low quality can easily be incorporated into pellets with the result that lambs will readily eat such feeds that they would otherwise refuse. In addition, feed wastage which usually accompanies the feeding of long or chopped hay is quite often a refusal of stems which would be consumed if ground and incorporated into pellets.

Insofar as lamb feeding is concerned, the only disadvantage of any consequence in feeding pellets is that of cost, including cost of grinding, pelleting and possibly added transportation when feeds grown on the farm are moved to a mill and then back to the farm for feeding. This can be partially compensated for by the increased adaptability of such feeds to mechanized feeding, reduced storage space, etc., but the savings obtained will vary considerably between different installations.

The primary purpose of this article is to present and discuss some of the published information dealing with several variables involved in the formulation and fabrication of high-roughage pellets after considering some of the overall problems connected with this method of feeding lambs. The effects of some of these variables on lamb performance are discussed below. It should be pointed out that no attempt is made to cite all of the published literature, but where numerous reports are available, only to cite representative examples.

EFFECT OF PELLET SIZE—On this subject, most feeders seem to prefer small pellets on the order of 3/16 or ¼ inch in size, however there is no information at hand that would indicate any substantial advantage for these smaller sizes. Esplin and Story[7] at the Colorado Station fed pellets of three sizes—¼" x ¼" round, 1" x 1" x ½" wafer, and ⅝" x 1¼" x 1¼" wafer made up from several formulas containing approximately 50% roughage. No significant differences were observed in gain, dressing percentage, feed conversion or carcass grade. Further reports from the Oregon Station by Church, et al.[6] in which pellet sizes of ¼", ⅜" and ½" made up from a ration containing 65% hay indicated no significant differences in lamb response to these different pellet sizes. Gross observations indicated that lambs will readily eat wafers of much larger size (1" x 4" in diameter).

EFFECT OF ROUGHAGE GRIND—On this subject many feeders are of the opinion that roughage should be ground very fine and there appears to be some evidence offering support to this view, although ration components may vary in response. In a paper by Esplin and Hazle[8] lambs gained more on a 50-50 alfalfa-corn pellet when the alfalfa was ground through a ¼" screen as compared to grinding through a 1/16" screen. Unpublished work from Oregon[4] of limited scope would indicate that a pellet made up of 100% alfalfa gave slightly greater gains when ground through a 3/16" screen as compared to a ⅜" screen. In other work from Oregon[6] dealing with pellets made up with appreciable quantities of grass hay, grinding through smaller screens (5/32" vs. 9/32" or 3/32", 3/16" and ¼") produced slightly greater (although non-significant gains) with very minor effect on other factors such as dressing percentage. California work[11] indicates that lambs gained more when the hay in an all alfalfa pellet was ground through a 1/16" screen and made up into ⅜" pellets than when the hay was put through a 1" screen and made up into 4" wafers. When summing up the reports on roughage grinding, the data would tend to indicate that relatively fine grinding is to be preferred.

Some evidence (Jensen et al.)[10] indicates an increase in the incidence of rumen parakeratosis in lambs fed pelleted feeds, and this has been attributed to finely ground roughage; however the most finely ground roughages used in the Oregon trials where grass hay made up from one third to one half of the roughage did not cause any appreciable incidence of parakeratosis. Reports in the literature indicate that finely ground roughage in pelleted form may lead to wood chewing by lambs, but it is the writer's opinion that this is at least partially a reflection of an incomplete ration, rather than just a manifestation of the lack of normal roughage in the stomach. It has been known for some time that feeding finely ground hay may cause a cessation of rumination (Swanson and Herman)[12] but fine grinding results in no appreciable change in net energy retention (Blaxter and Graham),[3] and there is no direct evidence that a cessation of rumination is harmful.

It should be pointed out that hammermill screen size is probably not a good measure of fineness of grind or particle size. Such variables as speed of the mill, moisture and fiber content of the feed may have considerable effect. In addition, the mean particle size is probably less in a small pellet than in a large one due to attrition resulting from passage through the pellet dies. Another factor involving particle size which may have some bearing on lamb performance is pellet crumbling. A finely ground feed can be compressed into a harder pellet resulting in fewer crumbled pellets and fines. Since some feeds are more palatable to lambs in pellet form than as meal, this factor might be quite important.

TABLE 1. Carcass Information on Lambs Fed Roughage in Pellet

Per cent of roughage in the pellet	90	80	70	60	50	40
Dressing %, based on feedlot weight	46.5	46.5	48.1	49.1	49.3	49.3
Calculated initial carcass weight*	32.6	32.7	32.6	33.0	32.2	33.4
Final carcass weight	50.2	50.8	51.8	54.1	51.5	52.0
Calculated carcass gain	17.6	18.1	19.2	21.1	19.3	18.6
Per cent relative gain, with 40% roughage = 100	94.6	97.3	103.2	103.4	103.8	100.0
Average daily gain	.562	.577	.561	.582	.528	.504
Adjusted average daily gain	.477	.490	.520	.572	.523	.504

*48% used as an arbitrary dressing %.

Dr. D. C. Church

AUTHOR—Dr. Church received a B.S. degree in animal husbandry from Kansas State University in 1950, an M.S. degree from the University of Idaho in 1952 and his Ph.D. degree in animal nutrition from Oklahoma State University. He has been on the staff at Oregon State College since 1956. His chief research interest is in ruminant nutrition and rumen physiology. He has published papers dealing with carotene and vitamin A in beef cattle, pellet feeding of lambs, lamb digestion studies, artificial rumen studies and information on lamb stomach development.

EFFECT OF NON-NUTRITIVE ADDITIVES—It is a common practice of many commercial feeders to include antibiotics in lamb fattening rations, and this practice is, no doubt, to be recommended when lambs are being fed heavy grain rations. The justification for including these products in high-roughage pellets, however, has not been proven from research trials—at least as a means of increasing growth rate or in order to reduce the incidence of enterotoxemia. In work reported by Neale,[1] lambs fed 80, 70 and 60% roughage pellets with and without chlortetracycline gained +.02, +.03 and −.02 lb. per day more, respectively, than comparable pellets with no antibiotic in them. Other published reports from California[11] and Oregon[4] dealing with high-roughage rations confirm the view that antibiotics cannot be expected to increase gain on this type of feeding. In cases where there may be mild disease problems or subclinical disease—especially with "tail enders"—the inclusion of antibiotics can easily be justified and may give some response.

Insofar as the inclusion of other additives is concerned, the current picture is about the same as with antibiotics. Papers reporting on tranquilizers[4, 9], dynafac[4], and enzymes[11] show that no benefit is to be expected when these materials are included in high roughage pellets. A number of other papers have been published dealing with the above mentioned additives when fed to lambs in meal or high-concentrate pellets, and the preponderance of results is negative

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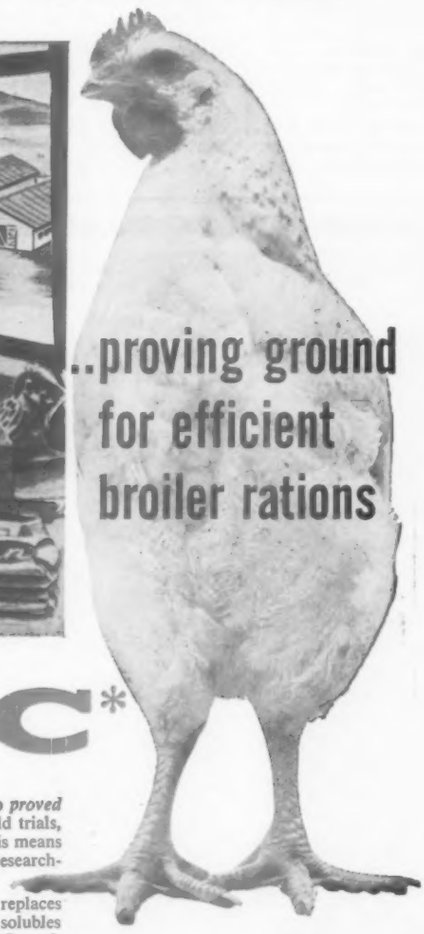

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insofar as a favorable effect on gain or improvement in feed conversion is concerned.

EFFECT OF THE PERCENTAGE OF ROUGHAGE IN THE RATION—On this subject the opinion of lamb feeders is quite diverse, and as a result, a wide variety of pellets are used commercially varying from pellets high in roughage to those quite high in concentrates. Considering lamb gain and profit, neither position can be refuted since a wide variety of feedstuffs are used commercially, and published information on many of the combinations used is not available, or has not been compared adequately with other rations. Reports from state experiment stations dealing with rations having various amounts of roughage in pellets have, as a rule, dealt with relatively simplified formulas, usually not involving over three or four feedstuffs.

In the series of bulletins from New Mexico reporting work done by Neale[28] [29] [30], pellets varying in composition from 50% alfalfa, 40% sorghum grains, and 10% molasses to 80-10-10% of the same feedstuffs have been tested with other minor variables. When the 70, 60 and 50% hay pellets were directly compared, heavy lambs gained more, and with the least feed, on the 70% ration. Lighter lambs did about equally well on the 60 and 70% pellets, but both were superior to the 50% hay pellets in gain and efficiency (no carcass data given). In another comparison 80, 70 and 60% hay pellets were fed. Gains on the three pellet combinations were quite similar with a very slight advantage overall for the 70% pellet. Feed conversions for pellets with no antibiotic in them were essentially the same for the 70 and 80% pellets, and both were greater than for the 60% pellet. Cost of gain favored the 80% pellet. No carcass data is given for the various treatments, but the bulletin implies that there were no differences attributable to treatment. It should be pointed out that all of these pellets tested at New Mexico had 10% molasses added, and that this level may or may not be an optimum level with high roughage pellets since no published information is available on the subject.

Other reports from the Kansas station[1] [2] [11] indicate that rations containing approximately 65% roughage resulted in greater gain than rations containing larger amounts of concentrate. In their most recent report,[11] Kansas investigators tested pellets containing 90 to 40% alfalfa hay and 10 to 60% grain sorghum. Very slight differences in gain were noted between those rations containing 60 to 90% hay. Feed conversion improved as concentrate in the pellet increased, and cost of gain favored the higher roughage pellets. Carcass yields based on feedlot weights (my calculations) increased as the amount of hay in the pellets decreased, and the grades, in general, improved slightly as the amount of concentrate increased.

Published information by other investigators[9] [13] [19] [20] indicates about the same picture of increased gains when roughage is increased in a mixed pellet. In general, data have indicated a lower dressing percentage on the higher roughage rations and in some cases lower grades, although this is not always the case[20]. In other comparisons, Weir, et al.[24] found that 100% alfalfa pellet-fed lambs gained just as well as lambs receiving a pellet with 30% barley, although feed conversion is in favor of the alfalfa-barley pellet. Two years' unpublished data from Oregon with heavy feeders on pellets varying from 100% alfalfa to 65% alfalfa, 30% barley and 5% molasses indicated that lambs gained slightly more as grain was increased in the pellet. Carcass field was increased only about 1% between the extremes in pellet composition. Carcass grades (1959 standards) improved slightly as grain increased, but in 1960 all lambs graded choice (USDA revised standards). Feed conversion was essentially the same on all pellets.

INFLUENCE OF QUALITY OF HAY—In experiments which have involved the use of pellets high in alfalfa hay, there remains some question as to the influence of quality of hay on lamb performance. Neale's[16] data indicates that protein content of the hay which he used was not a factor in lamb gain. However, the fact that lighter lambs seem to gain more on pellets containing slightly higher concentrate levels than heavy lambs[18] may be some indication that hay quality may be important. At any rate, it is a variable which should be investigated.

This is an opportune time to point out that some of the data from reports previously cited which does not include carcass information are impossible to evaluate completely. This is particularly true when dealing with such a subject as pelleting and with various amounts of roughage in pellets. Most of the information available points out that carcass yields are less or that shrinkage is greater in lambs fed high-roughage pellets than more standard rations having more liberal quantities of concentrates. In nearly all cases liveweight gains reported on experimental studies are based on full weights taken at the feed yard. Consequently, liveweight gain is not, by itself, a good criterion for the evaluation of a particular feed. In addition, if any differences in carcass grade can be attributed to a particular ration, it must be accounted for in the evaluation. As an example of how one might go about evaluating some of these rations, I have taken the liberty of using some of the published Kansas data[11] to illustrate the problem (Table 1). In the published report no carcass information is given other than an average grade, shrinkage to market and carcass yield based on the market weight, so there may be minor errors in calculations since the original data were not used. The method of comparison illustrated in the table is a simple one that is easily done, although it is not complete since neith-

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er feed conversion nor carcass grade is taken into consideration. It involves calculation of an initial carcass weight using initial liveweight and an assumed or arbitrary dressing percentage (48 in this case). On the assumption that lambs are randomly allotted to treatments, an assumed dressing percentage should be no more variable, with this type of study and is probably less, than those based on final feedlot weights.

After calculation of the initial carcass weight, carcass gain is calculated in terms of percentage gain of one of the lots (40% roughage lot in this example). These percentages are then multiplied by the gain of the base lot to calculate the adjusted average daily gains of the other lots. At first glance it may seem that a lot of calculations and assumptions are involved, however most of the data would normally be available, and the only assumption made of any consequence is that dressing percentages of the initial weights are comparable.

This procedure can be carried further, of course, when reliable information on feed conversion and carcass evaluation is available, and the feeder could calculate the net feed cost of producing lamb with relatively good accuracy.

Assuming that the reader agrees with the procedure outlined above, the adjusted daily gain figures in the table readily show that the high-roughage pellets used in this particular example are over-evaluated when average daily gain (not adjusted) is used as a means of evaluation. Of course, for complete evaluation feed conversion, feed cost, the effect on the carcass and other factors such as digestive disturbances must be taken into consideration before the picture is complete.

CONCLUSIONS—Published research on the use of high-roughage pellets for fattening lambs has indicated that feed additives such as antibiotics, tranquilizers and enzymes are of little value insofar as increasing liveweight gain or improving feed conversion. Lambs appear to do equally well on all of the different sizes of pellets which have been compared; the fineness of roughage grind does not appear to be a critical problem, with the possible exception that some pellets high in alfalfa may have the hay ground too finely. The percentage of hay in a pellet that results in maximum gain appears to be approximately 60% hay, although the published data leads to some confusion on this point with the result that high-roughage pellets have been over-evaluated in terms of true liveweight gain. This is not to say that high-roughage pellets may not be more profitable than those higher in concentrate since a shift in relative feed costs will determine how much hay can most profitably be blended into a pelleted feed. Research has shown that 100% alfalfa pellets are capable of producing good gains and carcasses that will grade up well under the revised USDA carcass standards.

Variables about which there is little or no information and which should be investigated include such things as the optimum amount of molasses, pellet density and fiber content, optimum combinations of many by-product feeds or low-quality roughage feeds such as straw or chaff, light screenings, cottonseed hulls, etc., when used in combination with the many grains and concentrates available on the market.

v v

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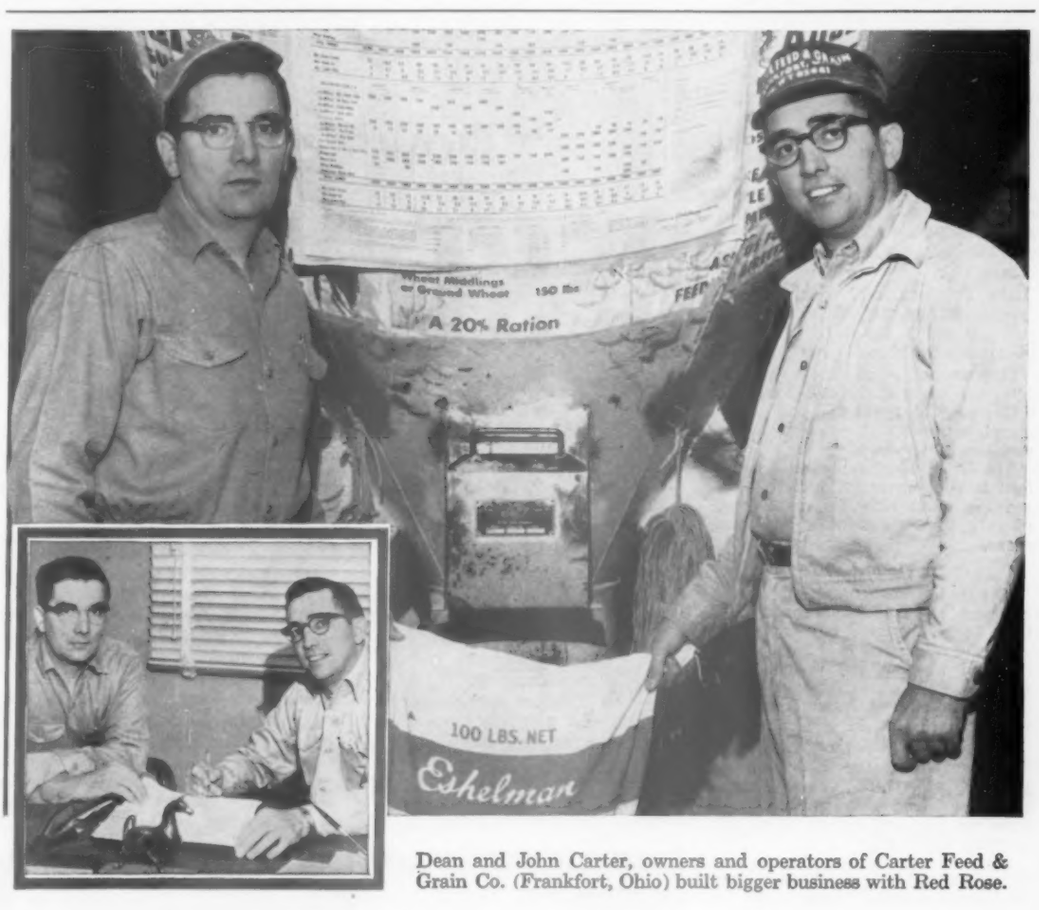
Convention Contest Winners Announced

NEW YORK—Winners of a contest conducted by Commercial Solvents Corp. in conjunction with the company's Baciferm booth at the recent National Turkey Federation convention in Chicago have been announced by the firm.

The winners and their prizes are: Mrs. Val Koneteky, Rushford, Minn., grand prize, 19-in. television set; Joe Ladd, Havana, Ill., floor polisher; Mrs. Geneva Janssen, Zeeland, Mich., electric hair dryer, and Mrs. J. H. Martini, West Lafayette, Ind., electric skillet.

CSC reported that 1,117 booth visitors participated in the contest.



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"Three years ago, we decided to distribute Red Rose Feed exclusively," writes John Carter who with brother Dean own and operate the Carter Feed & Grain Co., Frankfort, Ohio.

"This is one of the wisest decisions we ever made. Not only has it meant less inventory and faster stock turnover; it has given us the opportunity of placing our entire efforts on one line.

"The result is increased trade. Our volume consists of approximately 90% supplements. Our growth is continuing; because, through actual feeding experiences, Red Rose Supplements have proved to the customers that they get the best returns.

"The Red Rose Bulk Feed Service allows us to distribute supplement and grain mixtures to our customers at a lesser cost, which is beneficial in holding old trade and most helpful in soliciting new business."

Mr. Carter also cites Red Rose "cooperation, service, integrity ... plus always the Red Rose quality."

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CCA Reports Unit Business Volume Up 45% in 1959-60

KANSAS CITY — Consumer Cooperative Assn.'s unit volume of business in the 1959-60 fiscal year increased more than 45% to raise dollar volume 40.86% above the preceding year, it was reported in CCA's 1960 annual report.

New feed mills and a new feed booking program helped boost volume and gave promise of even better sales records in the future, it was reported. The new facilities included complete mills built at Muncie, Kansas, and Fremont, Neb., and a soybean processing plant that went into operation at Van Buren, Ark.

The report said that feed volume went up 87,668 tons during the year to a 230,223-ton total. Mixed feeds, fortifiers and builders are produced by CCA mills at Muncie; Fremont; Ida Grove, Iowa; Eagle Grove, Iowa; Enid, Okla., and central mixing plants operated by member associations.

Sales by local cooperatives mixing feed under CCA auspices may have pushed the total amount of co-op feed distributed during the year to 600,000 tons or more, it was reported.

The Muncie mill, which began operations April 11, supplies associations in eastern Kansas and western Missouri. Turkey feed was shipped into Colorado and northeastern Oklahoma.

The Fremont mill, which started operations Aug. 24, just a week before the end of the fiscal year, supplies eastern Nebraska associations.

Construction was begun shortly after the close of the fiscal year on a Cheraw, Colo., mill that will supply complete feeds and concentrates in southern Colorado.

The CCA report said that a cattle feed booking program, initiated last year, is responsible for distribution of co-op cattle feeds into several new areas.

Feeder Financing

The feeder finance program, it was reported, was responsible for pushing CCA feeds into new territory. Hog, turkey, chicken and beef feeding was financed through the program. Of the 3 million turkeys fattened on co-op feed last year, about half were fed under the finance program.

CCA reported dollar volumes for fertilizer during the 1959-60 fiscal year at $23,917,051; a $10,884,592 feed volume and an agriculture chemicals, supplies and equipment volume totaling $8,131,408.

Howard A. Cowden, president of CCA, said in the annual report, "We set a new record of $168 million in total volume during the 1959-60 fiscal year. In doing this, we extended to 32 consecutive fiscal years a record of never seeing one year's volume fall behind that of the year before. Savings for the year were $8,869,000."

Chase C. Wilson, director, feed and farm chemicals division, CCA, said that "CCA's feed business doubled in the past two years. I think it will double again in the next two. According to a survey just completed, more Kansas farmers use Co-op feed than use the next three ranking brands together."

Central Mills

He said that "CCA's central mills supply concentrates to the co-ops that have their own mills. They supply other co-ops all the complete feeds in meal form—the feeds they would make if they had their own mills. The central mills supply both groups all kinds of specialty feeds—chick, poult, pig, calf starter, milk saver, dog food, rabbit food, high-level antibiotics and feeds in pellet and granular form."

Mr. Wilson defined central mills as the mills through which CCA supplies member cooperatives. There are 14.

Eight are mills in which Co-op feed is made for CCA on contract. They are owned by the local cooperatives at Gibbon and Wilber, Neb., and Beloit, Dodge City, Gerard, Kinsley, and Larned, Kansas, and by the Mountain States Mixed Feed Co. of Denver.

One is owned by the Boone Valley Cooperative Processing Assn. at Eagle Grove, Iowa, a co-op of which 77 Iowa cooperatives and CCA are members.

And the other five are CCA's own mills at Enid, Okla.; Ida Grove, Iowa; Muncie, Kansas; Fremont, Neb., and, in a few weeks, Cheraw, Colo.

Industry Wins Fight To Get Chicken in School Lunch Menu

ATLANTA—Announcement by the U.S. Department of Agriculture that it plans to buy 5½ million pounds of cut up chicken for the nation's school lunch program apparently signalled a victory in a long time battle by the poultry industry to get chicken in the school lunch menu.

The chicken will be purchased with government funds at a cost of $2 million. The program means lunchrooms in schools throughout the nation will be serving chicken.

Sen. Richard B. Russell, Georgia, made the announcement. He has waged a months-long campaign to convince the department that chicken should be included and also pointing out that it would be a boost for the broiler industry, which has had its ups and downs.

In Georgia, the leading producing state in the nation, announcement of the plans to add chicken to the program met with enthusiasm. It was felt the move may inject some enthusiasm into the market.

At least, the news meant the broiler industry's "foot is in the door" as Max Ward, Gainesville, Ga., president of the Georgia Poultry Federation, put it.

He said that Washington's action is a "major breakthrough" for the industry.

Where to Be Bought?

Just where the broilers will be bought remains to be seen, but USDA officials pointed out processors anywhere in the nation are eligible to bid if the requirements are met.

Mr. Ward expressed the belief that the processors' share will be determined largely by designation of areas

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At the same time, Dow has its own source for many raw materials. These materials are carefully controlled for quality every step of the way to the finished product, assuring uniformity from one lot to the next.

And Dow maintains its position as a recognized leader in the farm chemical field by continually seeking new ways and means to help the farmer. The vast research facilities at Dow are constantly employed in the testing of new products. Upon acceptance, new products will take their place beside the recognized Dow brand name products that have won farmer acceptance and satisfaction for many years. Dow keeps ahead—so *you* keep ahead.

The most comprehensive merchandising program of the industry is yours when you team up with Dow. Part of it is shown here. For full information, write: THE DOW CHEMICAL COMPANY, Agricultural Chemicals Sales Department, Abbott Road Building, Midland, Mich.

National advertising — one of the most comprehensive campaigns in the business! A complete schedule of large-space advertisements, many in full color, in the national, regional and state farm magazines your customers read and enjoy, will keep demand high.

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THE DOW CHEMICAL COMPANY DOW Midland, Michigan

where the chicken is to be consumed.

Abit Massey, executive secretary, Georgia Poultry Federation, said the significant thing is that this is the first big government order for school use although the lunchroom program spends about $60 million a year for all types of food.

Group Effort

All of the poultry associations have been working toward this end. The National Broiler Council, the Southeastern Egg & Poultry Assn., Georgia Poultry Federation and others have been urging adoption of the plan in order to increase consumption of birds.

Ironically, it looked for a while as though the industry and others would have to conduct a training program of some kind to convince the government officials that chicken could be prepared properly for children.

USDA had reportedly been hesitant to put chicken on school menus because of alleged cooking difficulties.

A tete-a-tete on preparation developed when Rep. John W. Davis, another of Georgia's congressmen who has been working on behalf of the chicken industry, pointedly asked Orville Freeman, secretary of agriculture, why chickens were not among the surplus foods the department buys for lunchroom programs.

Back came Secretary Freeman with this reply:

"We have felt that substantial education in the appropriate use of chickens in such a program was needed before we could embark on a nationwide purchase and distribution program for this product."

This led a reporter, Frank Wells, of the Atlanta Constitution, to write a lead for his chicken story reading:

"Orville, here's some news for you. You can fry, bake, broil, boil, fricassee, barbecue and stew chicken.

"You can serve it with dumplings, creamed over toast, in pot pies, or just lay it out there fried and you don't even need a fork.

"Nearly any cookbook you pick up has recipes—even Yankee cookbooks.

"No mystery is involved. Just take off the feathers first, friend."

Serving Techniques

Secretary Freeman added as part of his explanation as to why the department hadn't bought chickens, that officials had been working with state school lunch technicians in developing specifications for chicken products as well as devising preparation and serving techniques.

All of this talk about how to serve the product brought a response from Rep. Davis that school children in his home county are eating chicken right along and that the same thing is happening in other sections of Georgia.

However, there were no federal funds to buy surplus chickens and they had to be bought with state funds.

Recently the Southeastern Poultry & Egg Assn., Atlanta, conferred with state officials developing some techniques on preparation of chicken in the school program. Some of this information was, presumably, used in convincing federal officials it was feasible to participate in the program.

Could Buy Legs

Eleanor Pryor, supervisor of the school lunch program for Georgia, pointed out that regulations require 2 oz. of lean meat or substitute in each school lunch. She admitted there were some problems, but she felt they could be solved. For one thing, she said, schools could buy leg pieces for frying.

Rep. Davis said he was even more confused by Secretary Freeman's statement that further research was necessary when he learned that frozen turkeys were being purchased. If turkeys, why not chickens, he wanted to know.

Then, within a few days of Freeman's statement regarding further research came Sen. Russell's announcement that 5½ million pounds of cut-up pieces would be purchased.

BIDDING PROCEDURES FOR CHICKEN

ATLANTA — Inquiries on bidding procedures in the U.S. Department of Agriculture's plan to use chicken in school lunchroom program should be directed to the Poultry Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

This was the word passed out at the USDA Atlanta office following announcement of plans to buy 5½ million pounds of frozen chicken for the nation's schools.

Russell H. James, area field supervisor of the Food Distribution Division, USDA, said buying will be on sealed bids. Processors who can ship in carload lots or more are eligible to bid. A carload contains about 30,000 lb.

Asks Clearance of Tylosin in Water

WASHINGTON — The Food and Drug Administration has been asked to clear use of the antibiotic tylosin in drinking water for chronic respiratory disease control in chickens.

FDA announced that Elanco Products Co., division of Eli Lilly & Co., proposed issuance of a food additive regulation to provide for use of tylosin tartrate in drinking water as an aid in treatment of CRD in broilers and replacement flocks, or for prevention of CRD at the time of vaccination or other stress.

LEADERS HONORED

HARLAN, IOWA—Rae E. Walters, president of the Squealer Feed & Squealer Grain Co., Harlan, was selected as one of Harlan's men-of-the-years recently, an award given each year to two or three men who have contributed the most in civic and community activities during his liftime. Al Krogstad, vice president and general manager of the Squealer Grain Co., was crowned king of the eighth annual Shelby County Mardi Gras. The king is also chosen on the basis of his civic and community activities through the years.

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Stocks of Feed Grains Hold Prices Down

You don't have to worry about being able to find plenty of feed grain this year. We have corn running out of our ears and a new record supply of grain sorghum, too. The four feed grains (corn, sorghum grain, oats and barley), hit a new record of 183 million tons Jan. 1, 1961, compared with 169 million a year earlier, also a record.

Every three months an estimate is made of the bushels of grain on hand. This gives us a good sizeup of the situation. These are taken as of the first of January, April, July and October. The estimates are issued by the government.

There was a supply of 4.7 billion bushels of corn on hand Jan. 1. This is 7% above the previous record set Jan. 1, 1960. The 10-year average is only 3.0 billion. In Kansas there was an increase from 69 million bushels in 1960 to 82 million Jan. 1, 1961. There is plenty of corn in the country. About 90% of the non-farm supplies were owned by the government.

Grain sorghum supplies hit a record, too. Jan. 1 there was more than a billion bushels on hand. This is 18% higher than Jan. 1, 1960. About 80% of the off-farm stocks were owned by the government.

The accompanying table shows changes that have taken place in the supplies of grain at the beginning of the year since 1953. It also shows the pounds per animal unit.

What will prices do the rest of this year? Some seasonal increase in the price of corn and milo is expected between now and July. With the big supplies on hand, you should not expect too much of an increase, however. A rise of about 15¢ per bushel for corn and 20¢ for milo seems about in order.

Changing government programs or discussion of changes is one factor of uncertainty. No one can really predict ahead of time what will happen with any assurance of having the correct answer.

How the government manages its inventory of corn and milo is important. When any one corporation owns 90% of the corn in off-farm storage, the way it runs its business will dominate the situation. In the present case, since ownership is in government hands, public and political considerations will be of major influence.

TABLE 1. Supplies of Feed Grains on Hand in the U.S. Jan. 1

Year	Total	Grain-consuming animal units	Stocks per animal unit
	Mil. tons	Million	Lb.
Average 1954-58	115.8	161.4	1,435
1953	90.6	158.8	1,141
1954	94.7	156.7	1,209
1955	107.6	161.5	1,333
1956	116.7	165.6	1,409
1957	121.1	161.8	1,497
1958	139.1	161.5	1,723
1959	156.2	170.6	1,831
1960	168.6	171.0	2,001
1961	182.5		

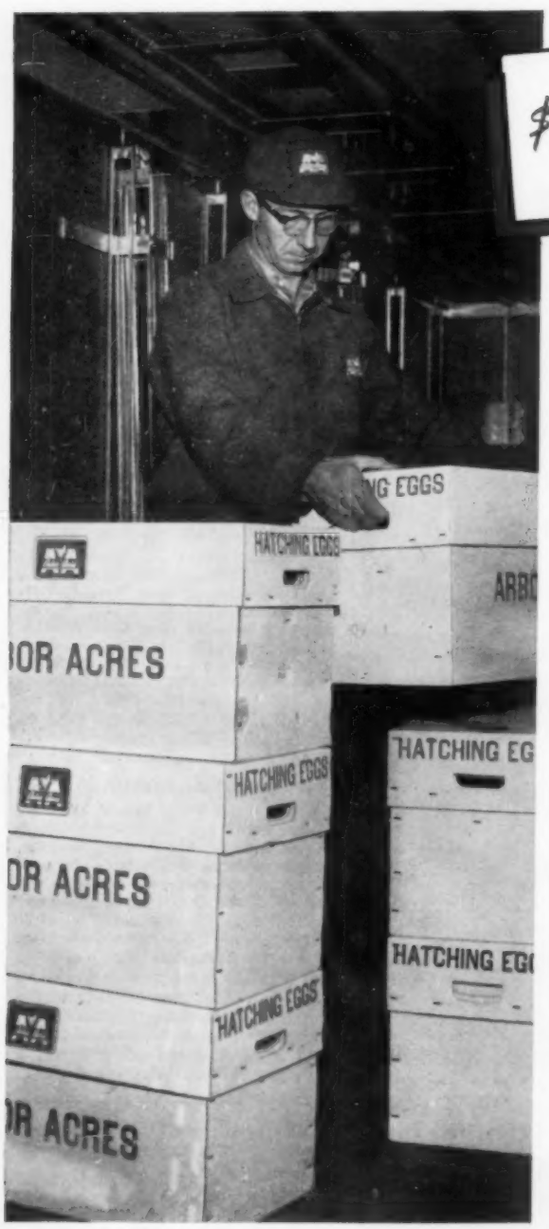
Source: USDA.

Order Wheat Transfer

DENVER — The U.S. Department of Agriculture has ordered 8-10 million bushels of government-owned wheat in Colorado, Kansas and Nebraska transferred to storage deposits on the West Coast.

The hard winter wheat will be shipped to Portland, Ore., for distribution to Commodity Credit Corp. franchised warehouses in California, Oregon and Washington.

It took averages like these



$3.069 Income per bird

241.0 eggs/pullet housed

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Three important Random Samples have just ended: the Central New York, Western New York and Florida Tests. All three matched the Mount Hope Queen with America's best-known layers. To be perfectly fair we averaged all three contests. The results are what you would expect from an Arbor Acres bird!

In the broiler business Arbor Acres' success was founded on a good bird with a big potential, a bird that could outperform competition consistently. Arbor Acres wouldn't settle for less. Naturally, only an equally good bird with an equally bright future could put Arbor Acres in the egg business. It took today's Mount Hope Queen and the promise in Mount Hope's 22 purebred lines to turn the trick.

Just look at the results below. Then imagine the payoff when handlers start passing out dividends for egg quality. But don't waste time thinking about it . . . tell your hatcheryman you want a flock of Arbor Acres — Mount Hope Queens. Right now.

	Income over feed & chick cost	Production/Pullet Housed	Av. Wgt./Doz. Eggs	Av. Rank in Egg Quality
Mount Hope Queens	$3.069	241.0	25.10	4
*Strain Cross A	2.942	237.8	25.22	6
*Strain Cross B	2.638	234.4	24.19	9
*Strain Cross C	2.621	224.8	25.10	15
*Incrossbred A	2.564	227.9	24.34	8
*Strain Cross D	2.510	217.1	24.72	14
*Incrossbred B	2.495	223.2	25.19	23
Three-Contest Average	2.559	221.8	24.96	—

*The six best-known white egg layers in America.

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Remember: The incidence of multivitamin deficiencies in high-energy rations may be more prevalent than that of single vitamin deficiencies. Be sure to check ***all*** your vitamin levels – including B_{12} – when you formulate your broiler, starter and grower rations – there is a specific Merck potency to fit your needs.

Still looking for an effective, low-cost antibiotic supplement? Set up a split-pen feeding trial with PRO-STREP® and demonstrate—with on-the-farm results—how PRO-STREP can pay off for you and your growers. The next time you order a Merck custom premix, be sure to include NICARB® or GLYCAMIDE®...and help give your broiler rations "built-in" coxy protection. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

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12 mg./ton of feed

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VERSATILE CALIFORNIA MILL SPECIALIZES IN TURKEY FEED OPERATIONS

By Roger Berglund
Feedstuffs Managing Editor

California may no longer be the biggest turkey-producing state in the U.S., but it is still mighty big. And one of the major turkey feed suppliers in the state is Topper Feed Mills at Fresno.

This firm—which the president calls a "high capacity local mill"—for some time has accounted for the feed for nearly 10% of California's turkeys and 1% of the U.S. total.

The Topper operation is a complete mill, equipped to do all types of grain processing and feed manufacturing, but Arne Jalonen, president and general manager, and his co-workers have specialized in and know the turkey business in particular.

The company was started only about a dozen years ago and is a relatively young organization, but the management and employees have a strong background in turkey feed operations as well as other aspects of the feed and farm supply business. Most of the firm's growth has been in the turkey end of the business, and today the mill in Fresno turns out concentrates and feeds for the production of some 900,000 turkeys a year.

300,000 on Own Ranches

About two thirds of the turkeys getting Topper feeds are grown by large independent producers in the San Joaquin Valley area served by the firm. In addition, the firm now grows some 300,000 birds of its own on ranches which Mr. Jalonen owns. Breeder flocks and a hatchery also are part of the turkey operations.

Much of the turkey feed output is concentrate which is used with grain purchased by growers in the local area. Mr. Jalonen has put special emphasis on the concentrate program, which he feels has been successful in serving independent turkey producers.

The modest Mr. Jalonen, a poultry husbandry graduate, is president and general manager of Topper Feed Mills. He got into his own business in 1946 after serving as general manager of the San Joaquin Valley Poultry Producers Assn. Initially, the firm was a partnership, and subsequently it became a corporation.

Along with the feed manufacturing business, the company operates farm supply stores which handle feed, seed, fertilizer and other supplies. In addition to the mill and a farm supply store in Fresno (located a short distance from the mill), there are outlets in Porterville, Kingsbury, Hanford, Chowchilla and Modesto (which includes bulk feed storage).

Versatile Operations

The Topper feed operation is one which in general offers considerable versatility in feed manufacture and can produce a good volume with what is considered a relatively low investment. Also, the business is in a position to keep abreast of changes and shift as needed.

In addition to his interest in turkeys, Mr. Jalonen has a special interest in mechanical operations, and the firm has made adaptations and designed, built and repaired a good deal of its own equipment.

Mr. Jalonen notes that the company has encouraged independence among turkey producers, and much of the turkey feed is sold on a cash or conventionally financed basis to large independent growers in the area. No turkey contracting is done. The producing operations range in size from 2,000 to 50,000 birds and average about 20,000 each.

The batching operation, with the scale dial in the background. In this picture the operator is dumping bagged material into the hopper scale beneath the hood on the right. Bulk ingredients are weighed out by using manually operated slide gates on the hopper bottoms.

A tandem trailer load of bulk ingredients is being unloaded. Most of the bulk ingredient trucks are hopper bottom units.

A partial view of the front of the Topper plant in Fresno. On the left are the bulk load-out bins. In the front part of this building are the laboratory for ingredient and feed analysis and the office, and immediately in front of the office is the truck scale for weighing bulk trucks.

This picture shows most of the Topper feed mill in Fresno. On the left is the section which houses the laboratory, office and part of the warehouse area. In the center is the two story mill section. Some of the equipment, including mixers, pellet cooler and cyclone, is on the top of the mill. Part of the warehouse for sacked material storage is on the right. The tops of some of the ingredient tanks are visible in the background.

Concentrate Program

A good deal of grain now is grown in the area, Mr. Jalonen points out, and many of the ranches buy Topper concentrate for growing and finishing rather than complete feeds. A 30% protein concentrate pellet accounts for a large share of the firm's feed business.

A considerable amount of milo is sold directly from grain producing ranches to the consuming ranches. Also, Topper sells grain to producers. In many cases, concentrate and whole grain are blended at a Topper facility in Fresno, and the producer then need not have a duplicate blending operation on his ranch. In a building near the farm store, Mr. Jalonen has six 25-ton steel tanks which hold concentrate and whole grains. Vari-drive motors and a screw conveyor beneath the tanks are used to blend the concentrate and whole milo or barley as ordered, and the mixture is then moved directly into bulk delivery trucks. In addition to using this or their own blending facilities, some producers feed on a free choice basis. Growers who buy grain can store it outside since there is no rain in the area during the summer months.

Producers using the grain and concentrate system can produce birds quite economically, Mr. Jalonen said, and this program has often helped them stay in business in the face of lower prices. With concentrate pellets at $4.50 cwt. (bulk delivered for cash) and milo at $2.25 cwt., for example, the producer would have a 20% protein growing ration costing about $3.40 cwt.

Feed costs in the area, Mr. Jalonen indicated, run around 13 to 16¢ per pound of turkey, and an average of 22¢ covers all costs.

Serves Independent Growers

The Topper president feels that good independent producers are the most efficient, and his firm's program is aimed at helping them stay in business.

The concentrate program, he added, has been instrumental in many growers not getting into their own feed manufacturing operations. If they have access to grain themselves, the company sells only what they have to buy anyway.

The years 1957 and 1958 were "rough years" in the turkey business, Mr. Jalonen pointed out, and after that some ranch operators turned to other enterprises or leased out their facilities, cutting out some Topper turkey feed business.

Then, two years ago, Mr. Jalonen began raising some birds himself. He now produces some 300,000 bronze turkeys on 11 Fresno County ranches, called Fedora Farms, which he owns. These farms are on less costly land, 35 to 50 miles from Fresno.

Mr. Jalonen is shown with the attractive green and white paper bags which are used for some of the packaged feeds.

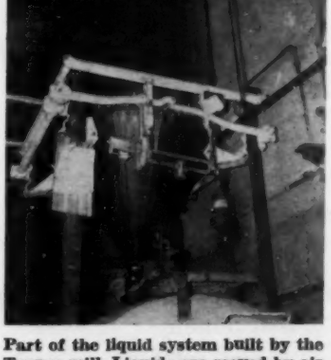
Breeder Flocks and Hatchery

In addition to the feed and turkey growing businesses, Topper Feed Mills has breeder flocks and leases a hatchery which produces poults to be sold or grown out in the firm's own operations.

While turkey feeds are the firm's principal product, the mill also produces some dairy, poultry, rabbit and goat feeds. Eighty-five to 90% of the production is pelleted.

Some 95% of the mill's output is delivered in bulk, using conventional bulk trucks, semi's and tractor and double trailer units. Getting into bulk delivery in 1948, Topper was the first in the area to make and deliver feed in bulk. Mr. Jalonen, at the start, designed and built his own bulk trucks, which included bucket elevators for unloading.

The company operates 28 trucks, and, with the extensive and large bulk delivery operations, the company is in the transportation business as much as the feed business, the manager pointed out. The truck scale in



Part of the liquid system built by the Topper mill. Liquids are moved by air pressure from storage tanks into this unit for weighing to obtain the amounts and combinations desired, and then they go by air pressure to the continuous mixer for blending with dry feed.

Topper Feed Mills, in addition to its feed plant, has several farm supply stores. The Fresno store is pictured here.

front of the mill is kept busy just about constantly weighing finished feeds and ingredients. Much of the ingredient tonnage comes in hopper bottom trucks. A Payloader is used for unloading boxcars of bulk ingredients.

Complete Mill

The plant is a complete mill. It was started as a mill which could handle all types of grain processing and feed manufacture, and it still is equipped to do this. The plant includes facilities for rolling, cracking and molasses blending as well as conventional grinding and mixing. The firm also makes its own premixes.

Bulk storage includes 16 ingredient tanks holding 150 tons each and 12 finished feed bins holding from 7 to 25 tons.

In batching, bulk ingredients are dropped into the hopper scale from overhead bins with manually operated slide gates. Some sacked ingredients, moved by forklift truck, also are used and are dumped into the hopper scale beneath the first floor. The batch is then elevated to the top of the mill for mixing. Because there is little rain in the area, Mr. Jalonen has two mixers, remotely controlled, and a pellet cooler on the roof of the mill. A corn cracker, sack cleaner and other facilities are on the second floor. Other operations are on the first floor and in the basement.

The mill set-up and operations are such that the plant can, much of the time, be operated by just two men. Production is at a rate of at least 10 tons or more per hour.

Liquid Systems

One of the features of the plant is a liquid handling and mixing system designed and built by the firm's own staff. There are tanks for fish solubles, condensed whey, molasses and MC-47. The liquids are moved by air pressure from the tanks into a scale

This facility, located in a separate building, is used for blending turkey concentrate and whole grain. Vari-drive motors and a screw conveyor beneath the tanks are used to blend the concentrate and milo or barley. The mixtures are moved directly into bulk trucks for delivery to ranches.

A new Bemis unit is used for bagging feeds, as illustrated here.

to obtain the amounts and combinations desired, and then they go by air pressure to the continuous mixer for blending.

The mill has its own shop, makes its own equipment repairs and installations and also rebuilds or builds machinery. For example, the pellet cooler, continuous mixer, conveying equipment and other facilities were made at the mill.

In general, the Topper operation is a versatile one, capable of turning out a variety of modern feed products with relatively good efficiency and low capital investment.

The business is one which has made for itself a very important role in what is the leading agricultural county in the U.S.—Fresno county, producer of more than 200 commercial crops, not the least of which are the thousands of turkeys getting Topper feeds.

A new electrical switch room is one of the mill's recent improvements. Mr. Jalonen, president and general manager, is shown pulling one of the switches. He takes a particular interest in the production operations of the plant.

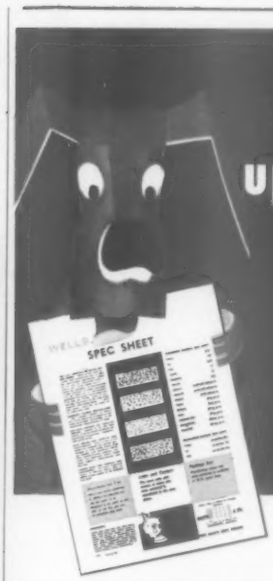


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TABLE 1. Chick* Placements for Broiler Hatchery Supply Flocks (Reported by Leading Breeders)

Month	Total			Domestic			1961 as % of 1960 %
	1959	1960	1961	1959	1960	1961	
	thousands						
January	2,124	1,657	2,268	1,884	1,496	1,871	125
February	2,414	2,114		2,256	1,947		
March	3,450	2,946		3,209	2,674		
April	3,765	3,452		3,573	3,215		
May	3,007	3,788		2,861	3,530		
June	2,575	3,539		2,392	3,304		
July	2,408	2,339		2,279	2,113		
August	1,834	2,283		1,706	2,083		
September	1,727	2,641		1,480	2,429		
October	2,121	2,756		1,994	2,558		
November	1,842	2,233		1,697	1,956		
December	1,704	2,039		1,605	1,649		
Annual total	28,971	31,787		26,936	28,954		

*Includes expected pullet replacements from eggs sold during the preceding month at the rate of 125 pullet chicks per 30 doz. case of eggs.

Broiler Hatchery Supply Flocks Up 25%

WASHINGTON—The U.S. Department of Agriculture reports that domestic placements of pullet chicks for broiler hatchery supply flocks by leading breeders totaled 1,871,000 chicks during January, up 25% from a year earlier.

At that time placements numbered 1,496,000. The current figure is 1% less than for the same date of 1959, however.

Total placements, domestic plus exports, came to 2,268,000 compared to 1,657,000 a year earlier and 2,124,000 in January of 1959.

The USDA placement data include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month. The conversion from eggs to expected pullet chicks was made on the basis of 125 pullet chicks per case of hatching eggs sold. The primary breeders included in this report account for a large percentage of total supply of replacement pullets for broiler hatchery supply flocks, USDA says. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

More Emergency Feed Areas Named

WASHINGTON—The U.S. Department of Agriculture has designated parts of Mississippi, Michigan, Utah and New Mexico as emergency areas where farmers and ranchers may buy government-owned feed grains at current support prices.

Areas designated are Greene County in Mississippi; Iron and Menominee Counties in Michigan; Rich County, Utah, and parts of Bernalillo, Rio Arriba, Sandoval and Socorro Counties in New Mexico, USDA said.

Unfavorable weather conditions have reduced feed supplies in these areas, making them eligible for assistance under the program. All the areas just designated, except in Michigan, will be eligible for assistance through March 31. The Michigan counties will be eligible for a 60-day period.

Feed grains owned by Commodity Credit Corp., as available, will be offered for sale in the designated areas.

In all, 135 counties or parishes are currently designated under the livestock feed program. The designated areas now include: 35 counties in Mississippi, 18 parishes in Louisiana, 11 counties in Wyoming, 7 in South Dakota, 25 in Utah, 7 in Wisconsin, 6 in Nevada, 13 in Michigan, 2 and parts of 2 others in Idaho, parts of 2 in Arizona, and 2 and parts of 5 in New Mexico.

Legislation authorizes the secretary of agriculture to sell feed grains owned by CCC at current support prices to provide feed for livestock where he determines there is an emergency area as defined by law.

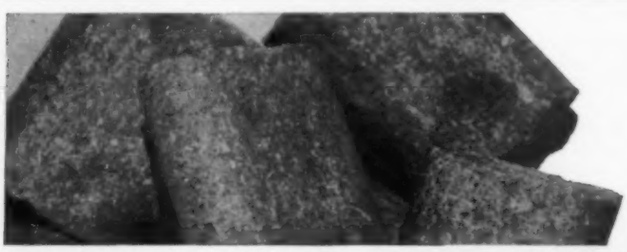
General Mills Names District Sales Head

SAN FRANCISCO—The newly-appointed feed sales manager for the General Mills Portland district is C. Paul Wieneke, according to the Sperry (western) operations headquarters in San Francisco.

C. P. Wieneke

He replaces Richard J. Ryder, who will transfer to a feed sales administrative post in the Minneapolis home office. Mr. Wieneke will direct feed sales and service for the district which includes the southern part of Washington and all but the extreme eastern part of Oregon.

A native of Portland, Mr. Wieneke was formerly employed by the Multnomah Athletic Club and the Tillamook Co. He joined General Mills at Portland in 1941, and was made a salesman for the company's line of Larro Surefeeds. Between 1949 and the present he had sales management responsibilities in the Seattle, Honolulu and central California districts, as well as having served as assistant general sales manager for feed in San Francisco.



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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Effect of Protein, Energy and Fat Content of the Ration on Calcium Utilization

● H. M. Edwards, W. S. Dunahoo, J. L. Carmon and H. L. Fuller, University of Georgia, Poultry Science, Vol. 39, No. 6, pp. 1389-1394, November, 1960.

ABSTRACT

This work was undertaken to study the effects of calorie and protein content of the diet on the calcium requirement of young chicks. Also, the use of rather high amounts of fat in certain experimental rations permitted the investigators to study the interaction between fat and calcium utilization.

Experiment 1—Three experiments in all were conducted using White Rock cockerels housed in batteries. Experiment 1 was carried out with three different calorie (1260, 1050, 840 productive energy calories) and protein (20, 25, 30%) levels. A basal soy-corn premix, with fish meal, fish solubles, vitamins, minerals was used which was then adjusted with the necessary amounts of fancy tallow, cellulose and dextrose to give the constant calorie:protein ratios of 42:1. Calcium levels were adjusted by using calcium carbonate at the expense of cellulose. The calcium levels used were: 0.47, 0.58, 0.70, 0.80, 1.20 and 1.60%.

Using growth as the criteria of response, the chickens receiving the 840-20 diet required not over 0.8% calcium, while those receiving the 1050-25 diet required at least 0.8% calcium. Although chicks receiving 0.8, 1.2, or 1.6% calcium on any of the diets showed no significant differences in growth rate, the chicks receiving the highest level of calcium during the 26 day trial were slightly heavier at the end. The bone ash data showed that using this basis of criteria, 0.9, 1.0, and 1.5% calcium were required for chicks fed the 840-20, 1050-25 and 1260-30 diets, respectively. When the results of bone ash were plotted with milligrams of calcium per gram of gain in weight, it was shown that the calcium of all diets was being utilized for bone formation approximately equally—with about 20 mg. Ca per gram gain being required for maximum bone ash for the 840-20 and 1050-25 diets. However, it was used much less efficiently with the 1260-30 diets and approximately 26 mg. Ca per gram gain was required for maximum bone ash in this case.

Although the authors did not give any consideration apparently to the calcium:phosphorus ratio effects on availability of phosphorus, etc., they do state "that theoretically the quantity of calcium per gram gain to give the same percent bone ash should be approximately constant regardless of the quantity of calcium required as a percent of the diet to give maximum bone ash. This would suggest that this poor utilization on the 1260-30 diet is caused by a dietary interrelationship. In view of the rather large amount of fat present in the 1260-30 diet, it was suspected that this fat was decreasing the calcium utilization." Although this may be true in part, it should be also pointed out that the effect of Ca:P ratios as affecting availability of phosphorus and consequently bone ash of young chicks is now well known. Recent work at several stations and commercial laboratories using well-designed factorial experiments has shown that the requirements of the young chick are about 0.6-0.8% total Ca and about 0.6% total phosphorus (Peeler, 1960; White-Stevens, 1960; Stephenson, 1960; Harms, 1960, 1961). Whenever the calcium level of the diet increases in relationship to the phosphorus level —or in other words when the Ca:P ratio widens, the availability of phosphorus decreases greatly and bone ash values decline markedly (Harms, 1960, White-Stevens, 1960). Thus, when experiments are run concerning the calcium requirement of poultry it is absolutely necessary in my opinion (SHM) to determine them at the identical calcium to phosphorus ratios. In the case of young chicks present evidence now indicates that when ratios are much wider than 1:1 to about 1.25:1, availability of phosphorus will decline. Since dilution of the basal diet in these experiments which furnished the phosphorus sources occurred when high fat levels were used, it seems entirely reasonable to suspect that Ca:P ratios had some effect also, as well as fat.

Experiment 2—The second experiment was carried out to determine what effects various levels of fat in the diet had on growth and bone formation at various levels of dietary calcium. In this experiment a constant level of the premix was used (60%), and the various diets were achieved by varying proportions of

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dextrose, cellulose and hydrogenated vegetable fat. Levels of fat used were: 0, 5, 10 and 15%. By the adjustments, all four basal diets had the same protein (23.6%), calcium (0.25%), phosphorus (0.81%) and calorie (895 PE calories) levels. Added calcium was added to the basal diets at the expense of cellulose to give levels of 0.25, 0.50, 1.00 and 1.50%. When considering weights of the chicks for 20 days, the only two treatment effects that were significant were the calcium linear and quadratic ones. While no statistically significant interaction between calcium and fat was found in this trial, it should be pointed out that large decreases in growth rate occurred when levels of fat increased at the low levels of calcium in the diet. The results of the bone ash data showed that all three calcium levels produced significant responses and that the fat linear response was negative and significant. There was no interaction between calcium and fat.

Experiment 3—In view of the rather small effect on bone ash at the high levels of hydrogenated vegetable fat in the second experiment as compared to the large effect in experiment 1 where beef tallow was fed, it was decided in experiment 3 to study the effect of type of fat on utilization of calcium at low levels in the ration. All diets were calculated to contain 895 calories of PE using a value of 2900 calories for all fats tested. The diets used 5% levels of the following fats, using 0.25 and 0.5% calcium levels: lard, beef tallow, refined and bleached soybean oil, hydrogenated refined and bleached soybean oil (two samples; iodine Nos. 134 and 94), and partially hydrolyzed fat containing approximately 40% free fatty acids. The authors state "that since one of the factors believed to effect energy value of fats was being studied, it was not desirable to use different energy values for the various fats tested." In my opinion this statement is not defensible completely and it seems that probably alternative diets based upon known calculations of productive energy or metabolizable energy of fats of different types could have well been incorporated into the experimental design (Camp, 1960; Couch, 1960; Kalmbach and Potter, 1959; Renner and Hill, 1958; Scott, 1958, etc.), to determine whether or not the statement as made was true.

The addition of all fats lowered bone ash significantly but only the differences in bone ash between chickens fed lard and soybean oil Iodine No. 57 were statistically different (5% level) among the fats tested. The results with growth data showed that as soybean oil was hydrogenated, it lowered the growth rate of the chicks (this has been reported previously by others with hydrogenation of fats - SHM). The results show that beef tallow and partially hydrolyzed fat also lowered the growth rate (nothing new here either). There also appeared to be some interaction between calcium levels and certain fats. It should be pointed out that these effects were obtained on calcium deficient diets by anyone's standards. The authors suggest that possibly also a biological assay method might be developed for fats using the relationship between calcium and fat relationships observed in the experiment.

In spite of the inconsistency in determining energy values of the diets

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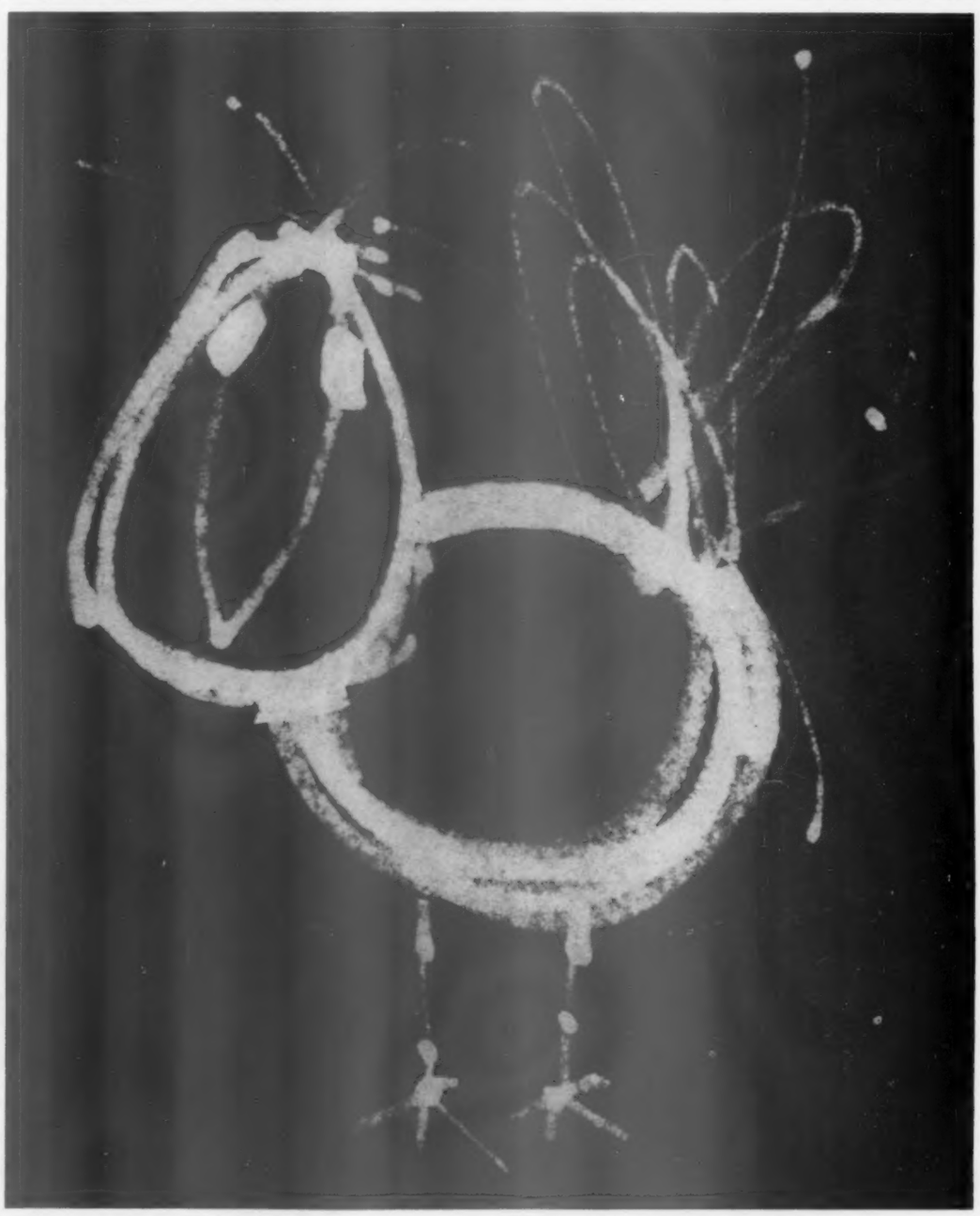

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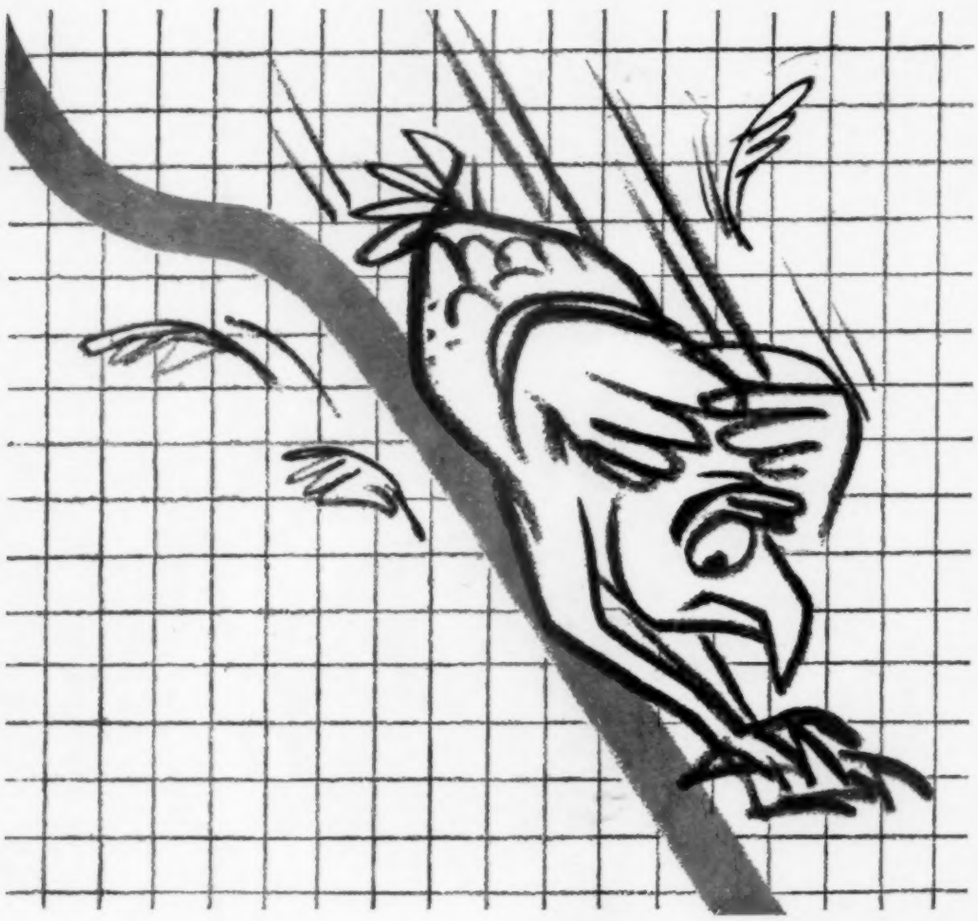
used—that is—calculating all fats as containing 2900 calories per pound of PE, very good correlations were seen between the ability of the fats in this study to promote growth in young chicks and the metabolizable energy values and percentage utilization of fats as reported by Renner and Hill (1958).

COMMENT

The results of this work in total are not too satisfactory in that answers are not given to some very important points. In my opinion the preponderance of evidence now indicates that the calcium requirement of chicks up to about five weeks of age is in the range of 0.6-0.8% total calcium. This appears to be true largely regardless of energy level of diet with the exception that if large amounts of fat are components of the ration, then the calcium requirement will probably increase somewhat. But, as far as practical feed men are concerned, this has little real importance since most rations being commercially mixed today do not contain such high added levels of fat.

Furthermore, the requirement of calcium is not only dependent upon the phosphorus in the ration (apparently about 0.6% total phosphorus minimum) but also, it is influenced by the Ca:P ratio if bone ash values are to be used as criteria for experimental results. It looks to me at present that the NRC "requirement" is far too high for young chicks in Ca, and certainly needs further revision even over that of 1960 published tentatively at 1.0% Ca and 0.6% P, giving a Ca:P ratio of 1.67:1. Also, source of calcium itself seems to be important when considering calcium requirements. For example, recent data (White-Stevens, 1960) indicates that calcium sulfate and calcium carbonate have different availabilities, depending upon the level in the diet, ration additives and phosphorus levels.

It is also my personal opinion that the entire question of energy as affecting phosphorus and calcium utilization still is up in the air. The current work from Georgia reported here is additional evidence of the effect of energy on increasing calcium and mineral requirements, at least with certain types of energy or fats. The work by Peeler (1960) and Slinger (1958) also reports evidence of increased requirments for minerals with increasing energy, which might be explained on a gram gain basis. Nevertheless, there is also some other evidence on the other side of the fence indicating that energy, per se, has little effect on Ca and P requirements (Harms, 1960). Just who is right needs further work.



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Merck Sales Set New Record, Earnings Off

RAHWAY, N.J.—Sales of Merck & Co., Inc., and consolidated subsidiaries edged up to a record high in 1960, but earnings declined for the first time since 1954, it has been announced by John T. Connor, president of the pharmaceutical and chemical firm.

Net sales in 1960 were $218,100,000, compared with $216,900,000 in 1959. Estimated net income after taxes was $27,800,000 in 1960, equal to $2.57 per share of common stock outstanding, compared with $30,000,000 or $2.79 per share in 1959. Net income for 1959 included $774,000 resulting from the favorable settlement of a tax claim applicable to prior years, the report said.

Mr. Connor said that continuing price declines in bulk vitamins and vaccines and increased competition from foreign producers were the main causes of the 7.3% decline in net income.

Net income before taxes was $49,200,000 in 1960, compared with $53,600,000 for 1959.

Fourth quarter sales amounted to $51,000,000 in 1960, compared with $50,000,000 for the corresponding period in 1959. Estimated net income after taxes for the fourth quarter of 1960 was $6,000,000, equal to 55¢ per share of common stock, compared with $6,100,000 or 56¢ per share for the fourth quarter of 1959. Net income before taxes for the fourth quarter was $8,900,000 in 1960, compared with $10,100,000 in 1959, the annual report concluded.

California Meetings

MODESTO, CAL.—An Upper San Joaquin Valley district meeting of the California Hay, Grain & Feed Dealers Assn. was held here recently to present information on the new major medical plan adopted by the association.

A similar meeting was also held in Hanford under the direction of Nate Turner, Fresno Milling Co. Attendance at both meetings was reported good.

Commercial Feedstuffs Consumption Increases

WASHINGTON — Consumption of commercial feedstuffs totaled 5,965,800 tons during the October-December quarter this season compared with 5,814,900 tons the same months a year earlier and 5,217,700 tons, the 5-year average for these months, reports the U.S. Department of Agriculture.

The number of grain-consuming animal units to be fed in 1960-61 is estimated at 166.2 million as against 165.8 million in 1959-60 and 163.3 million the average.

On the basis of these data, reports the USDA, 71.8 lb. feed were fed per animal unit in the first quarter of this season compared with 70.1 lb. in the same period last season and 63.9 the average.

Oilseed meal consumption of 3.4 million tons October through December was reported to be 150,000 tons above the same months last season.

Consumption of grain by-product feeds during the first quarter was reported to be about the same as a year earlier.

Production of meat meal and tankage totaled a record 424,000 tons the first three months of the season, slightly above last year. Disappearance of fish meal totaled around 75,000 tons the first quarter, about the same as last year. Shipments of alfalfa meal were reported down slightly from the comparable months a year ago.

Tell Program for Yieldmor Turkey Clinic

PIQUA, OHIO—John Hough, editor of Turkey World, will be the keynote speaker at Yieldmor Feeds' seventh annual turkey clinic, which is to be held at the Elks Club in Piqua March 9. Mr. Hough will discuss what the retail buyers are doing to the turkey industry.

The clinic is designed to probe, with the help of panels of experts, some of the more vital problems common to turkey growers such as management and housing, trends to nutrition and feeding, marketing and disease control, according to George Gibson, general manager of Yieldmor Feeds.

Registration for the one-day event will begin at 11:30 a.m., followed by lunch with Yieldmor as host, said Mr. Gibson.

The afternoon program includes four question-and-answer periods covering the clinic's primary topics. Panel moderators are: Howard Wildey, secretary to the Ohio Turkey Assn.; Dr. A. R. Winter, chairman of the poultry department, Ohio State University; Dr. Glyde A. Marsh, D.V.M., Ohio State poultry extension service and College of Veterinary Medicine, and Dr. M. S. McCartney, D.V.M., Ohio Experiment Station.

Oakley Ray, American Feed Manufacturers Assn., will speak later in the afternoon on "Looking Ahead at the Turkey and Feed Industry."

ELEVATOR EXPANSION

COTTONWOOD, IDAHO — Installation of a complete feed mill is planned by the Cottonwood Elevator Co. here, reports Walter Ruhoff, manager. The mill will be housed in the company's three-story concrete building which has a full basement and adjoining concrete flat house. It will include overhead bulk ingredient bins; fixed automatic blending scale; 1½ ton horizontal mixer with surge bin; 5 tons per hour capacity steam roller with a 40 h.p. oil-fired steam generator and water softener; twin rotor molasses mixer with metered flow; hammermill, and dry feed roller. Provisions have been made in the design of the plant for the possible future addition of a pelleting machine and cooler.

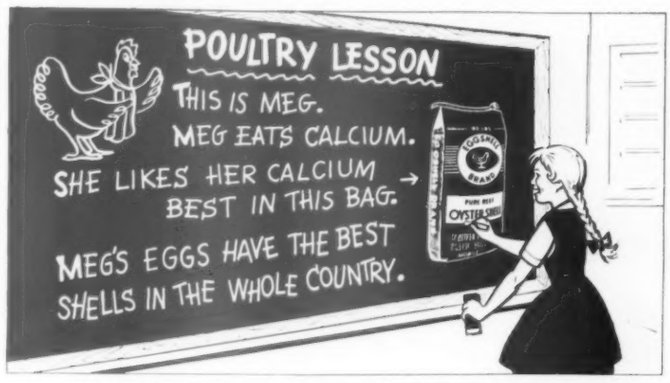
Food Additive Petition For Nystatin Filed

WASHINGTON — The Food and Drug Administration has announced the filing of a food additive petition by E. R. Squibb & Sons.

The petition proposes issuance of a regulation to provide for safe use of nystatin in medicated chicken feed at a level of 50 gm. per ton for prevention and 100 gm. per ton for treatment of crop mycosis and/or mycotic diarrhea in chickens and laying hens.

50TH WEDDING ANNIVERSARY

HIGHGATE CENTER, VT.—About 100 friends and relatives extended congratulations to Mr. and Mrs. Owen C. McCuin, Sr., when they observed their 50th wedding anniversary recently. Mr. McCuin has operated a grain and feed business in Highgate Center since 1915.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SHE LIKES HER CALCIUM BEST IN THIS BAG.
MEG'S EGGS HAVE THE BEST SHELLS IN THE WHOLE COUNTRY.
EGGSHELL BRAND
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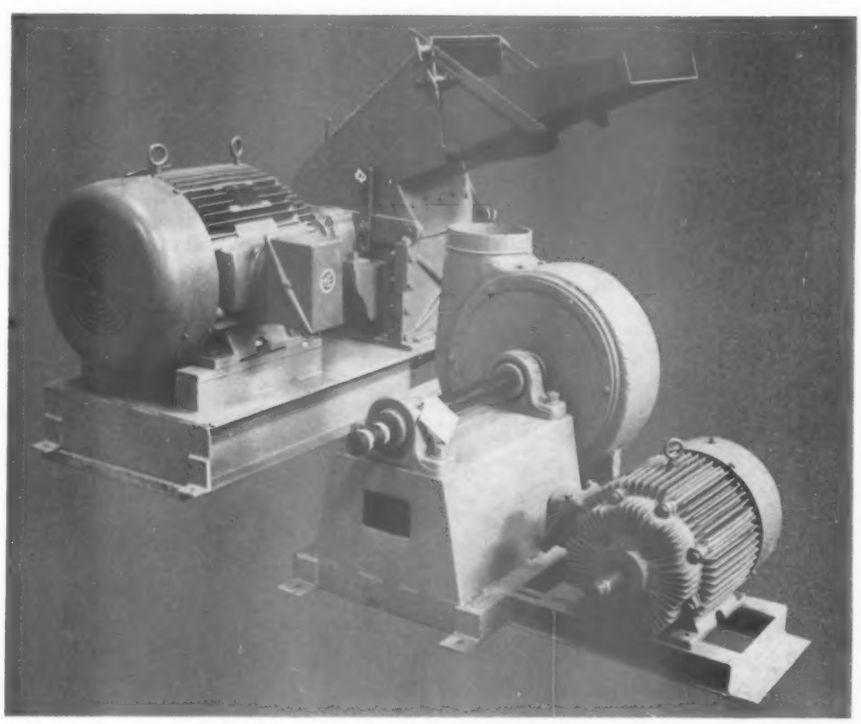
New FORSTER All-Purpose Hammer Mill



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- More even wear on hammers
- Separate fan increases capacity 30%
- Cuts maintenance cost
- Improved rotor design cleans mill faster
- Gives continuous service

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Gentlemen: We are interested in more information.
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FS-34

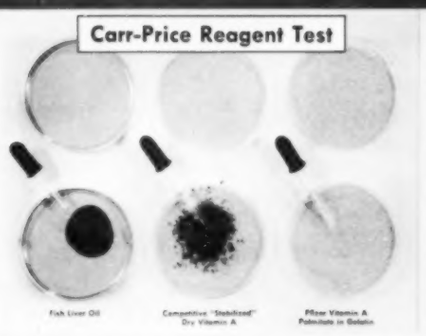
Why Higher Purity Means

Here's why Pfizer's Vitamin A is your least-cost source by far

THE BEST PROTECTION

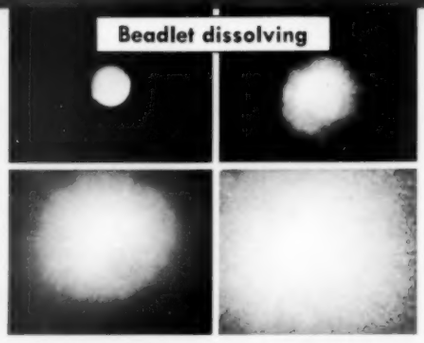
(this special gelatin matrix is far more than a diluent...
actually improves total performance of vitamin A in your feed products.)

...it provides unbeatable protection



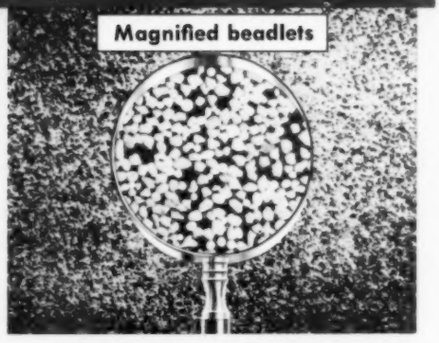
Fish liver oil (above) and many ordinary competitive vitamin A products react strongly . . . means some vitamin A is exposed and unprotected. Pfizer Vitamin A particles are sealed in gelatin to protect potency from oxidation.

...promotes greater bio-availability



It dissolves completely in digestive fluids at body temperatures to release 100% of the vitamin A for rapid absorption. Other products with waxes may inhibit release. Those with oils are not as efficiently absorbed.

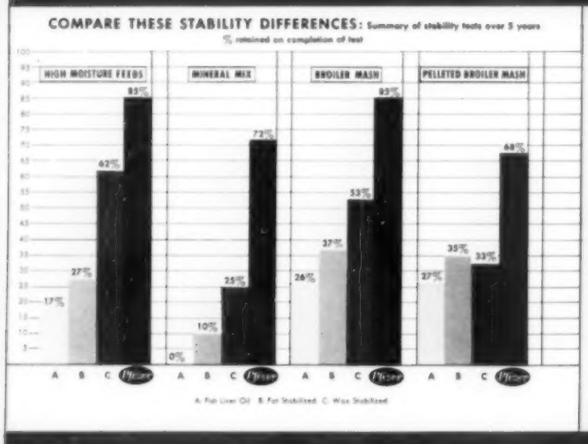
...and it's tailor-made for mixing



Dry, uniform, free-flowing beadlets aid in thorough distribution. Size and potency have been specially selected to facilitate the best distribution in your feeds . . . especially important with starter and pre-starter feeds.

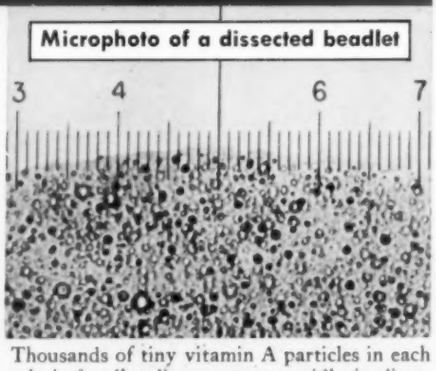
TEAMED WITH THE HIGHEST-QUALITY CRYSTALLINE A

...unsurpassed stability in all types of feed



Pfizer Vitamin A retains greater potency in pelleted and high-moisture feeds, concentrates, mineral mixes, supplements, bulk feeds and range cubes. Cuts costly overfortification. Assures you of providing more vitamin A when feed is consumed.

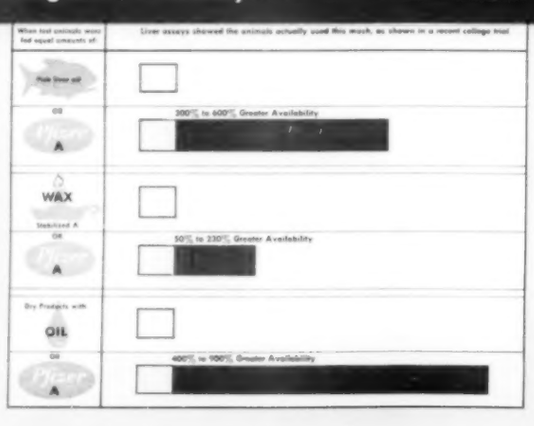
...most usable form of vitamin A



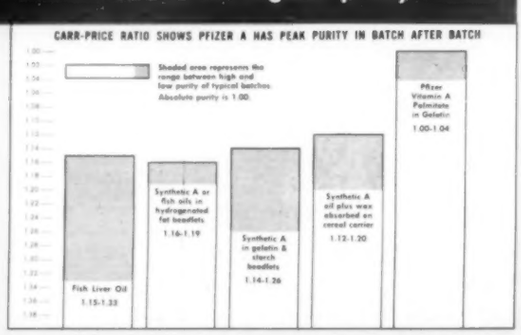
Thousands of tiny vitamin A particles in each gelatin beadlet disperse most rapidly in digestive fluids—are available for absorption at once.

...maximum biological availability

A recent college test shows Pfizer Vitamin A has availability from 300-600% greater than fish liver oils, 50-230% better than ones in wax and up to 900% greater availability than dry products with oil. Liver assay tests are the final proof of vitamin A absorption . . . show how much is assimilated and stored.

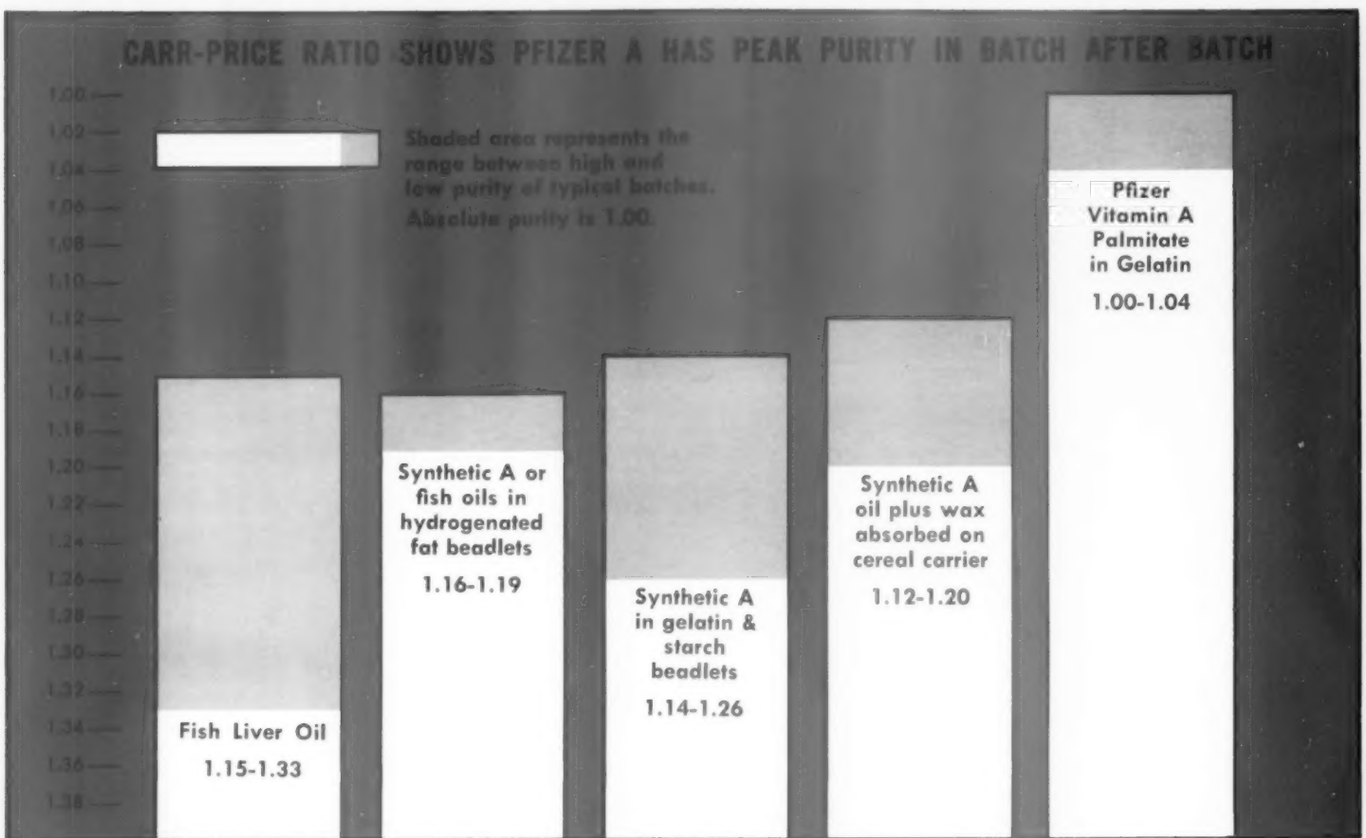


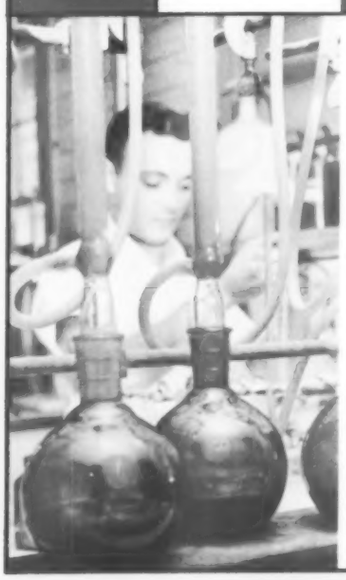
...and the highest purity


CARR-PRICE RATIO SHOWS PFIZER A HAS PEAK PURITY IN BATCH AFTER BATCH
Shaded area represents the range between high and low purity of typical batches. Absolute purity is 1.00.
Fish Liver Oil
1.15-1.33
Synthetic A or fish oils in hydrogenated fat beadlets
1.16-1.19
Synthetic A in gelatin & starch beadlets
1.14-1.26
Synthetic A oil plus wax absorbed on cereal carrier
1.12-1.20
Pfizer Vitamin A Palmitate in Gelatin
1.00-1.04

Impurities can contribute to loss of vitamin A. Pfizer, by achieving 99% purity, supplies you with vitamin A having greater stability in shipment, storage, mixing and in feed.

Greater Savings to You





The Carr-Price Ratio and Why It's Important

The Carr-Price Ratio is an indication of vitamin A purity. The Ratio is based on two tests:

1. *The U.S.P. XV revised spectrophotometric method*—a test of great accuracy . . . but only down to the level of 500,000 units of vitamin A activity per pound—much higher than normal feed supplementation.
2. *The Carr-Price Assay*—a chemical test useful on complete feeds where low levels of vitamin A are present. However, it is *not* an accurate gauge of true vitamin A actually present in feeds because carotenoids and impurities in the vitamin A source will also give a positive reaction with this Carr-Price test.

The Carr-Price Ratio is determined by dividing results of the Carr-Price Assay by the results of the spectrophotometric test. An absolutely pure source of vitamin A has a Carr-Price Ratio of 1.00. This means that only pure vitamin A will assay identically by both methods. Pfizer Vitamin A Palmitate in Gelatin has a Carr-Price Ratio of 1.00 to 1.04, as pure as any vitamin A you can buy today.

Unless you buy vitamin A and formulate feeds according to the true potency determined by the spectrophotometric method, you risk under-fortification. Use of chemical Carr-Price Assay values alone can be very misleading (unless the vitamin A source being tested is pure . . . as in Pfizer Vitamin A).

Pfizer Vitamin A Palmitate in Gelatin is of pharmaceutical quality . . . 99+% pure . . . 10% to 30% purer than most other vitamin A products. You can use the Carr-Price test and obtain more meaningful feed assay values with Pfizer Vitamin A because of its great purity. The chemical Carr-Price Assay can be very misleading if used with other products which contain many impurities.

This greater purity is important because impurities can contribute to vitamin A decomposition. By achieving the greatest purity available, Pfizer can supply you with a vitamin A having greater stability in shipment, storage, mixing and pelleting processes and in your feeds. That's why greater purity means greater savings for you.

You save still more with Pfizer A. Because of superior purity, it takes less of it to deliver equal or greater potencies in the feeds you make.

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1960 Milk Production Up 1% As Cow Numbers Decline 2%

WASHINGTON — The story of milk production in the U.S. in 1960 is one of two records—a record level of milk production per cow and a record low number of cows on farms.

With these two contrasting records, U.S. milk production totaled 122,920,000,000 lb. in 1960, about 1% more than the revised 1959 production of 121,989,000,000, according to the milk production report from the U.S. Department of Agriculture. The reason: Milk production per cow increased 3% from 1959 to 1960, more than offsetting the 2% decline in milk cow numbers.

Annual milk production per cow set a record of 7,004 lb. in 1960, up 189 lb. from the previous high in 1959. In the revised series of estimates, annual U.S. output per cow has increased 3-4% per year since 1954. In the East North Central region, the annual rate increased only 1% from 1959, partly due to cold spring weather which delayed turning herds out on pasture. The increase in milk per cow was 3% in all other regions of the county except the South Atlantic where it was 2%.

The average number of milk cows on farms during 1960 was 17,549,000, a record low in the series of estimates beginning in 1924. Milk cow numbers have decreased each year since 1953, but the decline from 1959 to 1960 was only 2%, compared with the 4-5% in each of the three preceding years, USDA said.

USDA says that most of the increase of 931 million pounds in 1960 milk production occurred in the North Atlantic and Western regions of the country. New York and Pennsylvania accounted for most of the 3% increase in the North Atlantic region. Most of the 3% gain in the West was in California and Washington.

Milk production in the important North Central area showed little change from 1959 with gains in Ohio, Wisconsin, Minnesota, Iowa and Missouri offset by declines in other states. Production increased slightly in the South Atlantic region but dropped 2% in the South Central. The five leading states in milk production for 1960 are: Wisconsin, New York, Minnesota, California and Pennsylvania.

Cows and heifers two years old and over kept for milk totaled 19,291,000 Jan. 1, 1961, USDA said. This is 1% less than a year earlier and the smallest number since 1909. These estimates include heifers two years old and over which have not freshened.

Heifers one to two years old kept for milk are estimated at 5,034,000, down 1% from Jan. 1, 1960. Heifer calves under one year kept for milk increased 1% from a year earlier to 5,611,000 head.

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FOSFORO *high-quality, economical mixing phosphorus*

Write for Information SHELLBUILDER COMPANY HOUSTON, TEXAS

General Mills Forms New Products Division

MINNEAPOLIS—A newly formed specialty products division of General Mills, Inc., was announced this week by C. H. Bell, president of the company. The new division is a combination of the former oilseeds and special commodities divisions.

Sewall D. Andrews, Jr., vice president, who has headed the oilseeds operation, will serve as general manager of the new division. He will be responsible to E. O. Boyer, executive vice president in charge of basic commodity activities for General Mills.

The specialty products division will operate the company's oilseeds processing plants in Belmond, Iowa, and Rossford, Ohio, and a joint venture with the Pacific Vegetable Oil Corp., Sidney, Neb. These plants produce soybean and safflower oils used in a wide variety of food and industrial products, as well as soybean proteins used in foods, feeds and industrial applications.

The new division will be responsible for operation of a plant at Keokuk, Iowa, which makes and sells vitamins, wheat starches and proteins, wheat germ oil and glutamic acid, and plants at Kenedy, Texas, and Karachi, Pakistan, which produce guar gums. These products have applications in industries ranging from the manufacture of paper to explosives.

The activities of the specialty products division, Mr. Bell pointed out, now include a variety of products based mainly on agricultural raw materials and, therefore, form a logical combination.

Robert Puelz Heads Lincoln Grain Exch.

LINCOLN, NEB. — Robert A. Puelz of the Equity Union Grain Co. was elected president of the Lincoln Grain Exchange at a recent meeting of that group. Mr. Puelz succeeds Clarence O'Brien.

Sam A. Darrough, manager, Lincoln-CGF Grain Co., was elected vice president and Clifford H. Schroff, president Paul Grain Co., was elected secretary. The new treasurer is J. Floyd Chance, manager of the grain department at Gooch Mill & Elevator.

The directors are: Mr. Puelz, Mr. Darrough, Mr. Schroff, Mr. Chance, Dwight Bachenberg, Westcentral Coop Grain Co.; Mr. O'Brien, Charles Shehnert, manager, Lincoln Elevator & Feed Co., and Keith Hauschel of Honeggers' & Co.

How Union-Camp's 5-Star Plan saved multiwall bag user over $130,000 a year

Making things the same can sometimes make a whale of a difference. Particularly in a multiwall bagging operation. The Smith-Douglass Company, Inc., of Norfolk, Virginia proved it recently when they put Union-Camp's 5-Star Plan into action. The difference—in annual packaging savings—came to over $130,000 a year!

Standardize = Economize

Initial 5-Star Plan surveys at Smith-Douglass' six plants revealed that *standardization* held the key to major cost reductions. Three plants used sewn open-mouth multiwall bags. One used sewn valve bags. The remaining two plants used both types of bags.

Union-Camp's multiwall specialists showed that $30,000 a year could be saved by converting all six plants to sewn open-mouth bags and using open-mouth bag filling machines.

5-Star Plan in action. Plant surveys made by Union-Camp multiwall specialists paved the way for the major packaging savings described here.

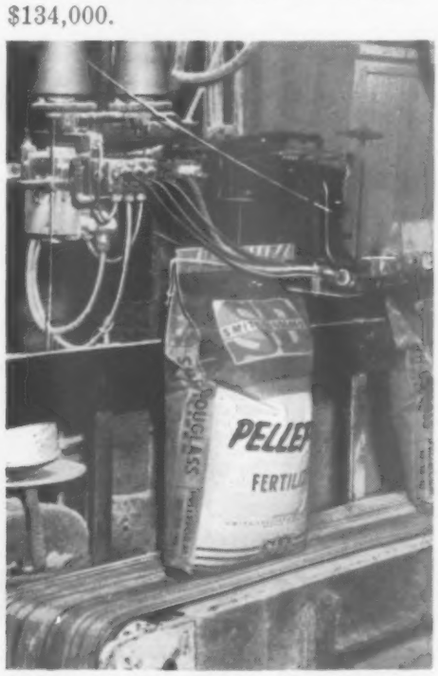
That was only the beginning. By carrying the change-over one step further, and standardizing on *size* and *construction* of multiwall bags, the company would save another $22,000 a year.

1 Design Replaces 160

Next, Union-Camp's survey team analyzed the company's existing bag *designs*. They found there were about 160 designs being used. Here, again, standardization was recommended.

By creating one basic design, eliminating an expensive yellow outer sheet, and using the same printing copy for all bags, the company netted additional economies of $84,000 a year.

$30,000 plus $20,000 plus $84,000. Total annual packaging savings—$134,000.



$30,000 a year savings resulted from converting to sewn open-mouth multiwalls in company's six plants.

How Much Could You Save?

Hundreds of companies—large and small—reduce their multiwall packaging costs by taking advantage of Union-Camp's 5-Star Plan. This comprehensive service is free. It covers bag design, bag construction, specifications control, packaging machinery and a survey of your materials handling operation. An improvement in any one of these areas conceivably could result in substantial economies for you.

See your local Union-Camp man for complete details.

This basic bag design, now used for all Smith-Douglass brands, reduced company's multiwall costs by $84,000.

FREE 16-PAGE BOOKLET

Write Dept. M-4 today for a free copy of Union-Camp's new 5-Star Plan booklet. It describes many case histories showing how packers like yourself have achieved greater efficiency and economy in their multiwall packaging operations.

UNION-CAMP

MULTIWALL BAGS

Union Bag-Camp Paper Corporation 233 Broadway N.Y. 7, N.Y.

Michigan Poultrymen Hear Talks On Nutrition, Contracts, Prices, Credit

By Special Correspondent

EAST LANSING, MICH.—Today's egg mashes priced at about $60-65 ton are a far better buy than chicken feeds bought as recently as 10 years ago.

Much of the improvement in today's poultry feed formulas has come from research at agricultural experiment stations at the land-grant colleges and universities, according to Dr. W. K. Warden of Michigan State University.

Dr. Warden, speaking at a Poultry Day session during the 46th annual Farmers' Week program in East Lansing, told the Michigan poultry producers that today's high-energy feeds will support 75% or more egg production yearly in light breed layers.

Egg mashes now contain mostly corn and soybean oilmeal, plus the extra vitamins and minerals to properly fortify the feed, Dr. Warden said. About 4 lb. of this type of feed is needed to produce a dozen eggs, compared with 5 to 6 lb. of the high-fiber type feed fed as recently as 1940.

Poultry nutrition research since then has shown how to get better balance of the feed ingredients for top growth, fattening or egg production. Feed economy has come from learning how to use lower cost ingredients, by improving yield and variety of feedstuffs, and by improving feed processing techniques to increase nutrient quality.

Binder materials may make poultry pellets harder and more attractive, Dr. Warden pointed out. But the binder ingredient may combine with certain vitamins and make them unavailable to the bird. Recent research has shown that a mixture of half mash and half pellets supports faster growth and improved feed efficiency than either mash or pellets alone.

Stabilized Fat

One ingredient that does improve appearance and increases feeding value is stabilized fat. Animal fats or oils increase feed energy content and thus may lower production costs. A little fat in the feed also helps to reduce dustiness, Dr. Warden pointed out.

Research has helped to develop better soybean oil meal production processes for better feeds. New processes now result in a readily available, high quality, inexpensive plant protein from soybeans that ranks with the best animal protein in amino acid balance. The limited methionine in soybean meal can be easily added.

Fish meal and fish solubles, in addition to their high nutritive value, also contain other unknown factors that improve early growth as well as fertility and hatchability of eggs. These ingredients are especially useful in chick starter, early grower and breeder feeds, he said.

Corn makes the best grain for high energy rations because it contains the highest concentration of energy per pound. When prices are favorable, animal or vegetable fats can replace part of the corn in high energy rations.

Most poultry feeds that growers buy today are well fortified with both the necessary vitamins and minerals, Dr. Warden told the audience. Premixes that supply the needed vitamins today can be added at a cost of about $2 a ton and have made possible some of today's highly economical poultry performances.

Certain additives are essential in poultry feeds, Dr. Warden told the poultrymen, if production is to be economical. Antioxidants, used to stabilize fats, oils or carotene in feed and alfalfa meal are examples. Extremely small amounts of these compounds will safely keep fat from becoming rancid and will reduce the loss of fat-soluble vitamins.

In another presentation, Dr. Charles C. Sheppard, Michigan State University extension poultry specialist, told the audience that many contracts now being written between producers and integrators do not make sense. Dr. Sheppard posed 12 basic questions that each poultry farmer should ask himself before signing any contract:

1. In there a specific time or date involved in the contract?
2. Is renewal or termination automatic?
3. How can this contract be canceled?
4. Is the farmer sure of the identification of the other party?
5. What is the legal relationship of the parties?
6. Is the contract legal?
7. Is there any means of arbitration stated in the contract?
8. What is non-conformance? Who determines non-conformance?
9. Who supplies what and at what prices?
10. When and how does the farmer get paid?
11. Are there any management questions that have to be settled between the parties before the contract is signed?
12. What are the marketing arrangements?

Some of these questions are harder to answer than others, the poultry specialist said. Cancellation, for instance, is not possible in some contracts. Sometimes even the death of the operator doesn't cancel the contract.

Questions 10, 11 and 12 about supplies, management and marketing are the ones that probably cause the most concern and involve the most misunderstanding, Dr. Sheppard stated. For example, marketing items should cover prices and how to determine them, the market place and when to market. The contract should also specifically cover such questions as grades and standards, volume, cartons or cases to the extent that each farmer should know whether or not he is to do his own grading and furnish his own cartons and cases.

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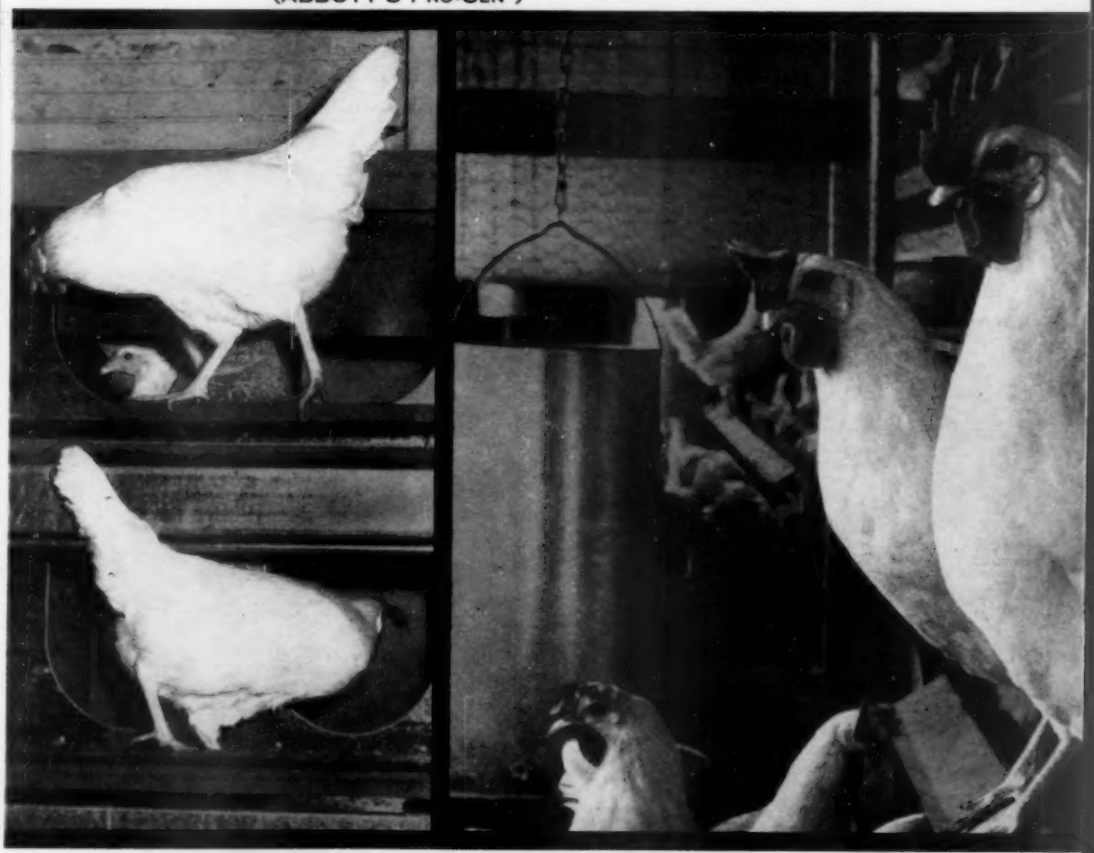

In test after test, Arsanilic Acid performs best under practical conditions!

When good feeds, top management and first-rate housing combine to keep hens healthy, laying percentages are almost sure to be satisfactory. But these three basic factors of good poultry raising cost money—extra money. They represent ideals . . . always desirable but not always attainable.

Arsanilic Acid Works Best When It's Needed Most. Most egg producers take a practical viewpoint. They know they can't operate like a research farm. Yet, production is the lifeline of their business . . . so, they turn to Arsanilic Acid to help keep hens healthy—keep production up.

Almost every hen is host to disease germs. Under practical conditions—during stress—hens may lack the vitality to fight off infection. That's where Arsanilic Acid comes in . . . and the tougher the battle, the harder Arsanilic Acid fights. It opposes harmful bacteria in the intestinal tract—helps protect against active disease—helps prevent laying slumps.

Most farmers think that the payment plan is the most important part of the contract, Dr. Sheppard pointed out. Money is important, but the details under which the contract operates may turn out to be much more important than the money details.

Lower Egg Prices

Outlook for egg prices next fall is that they will not be as high as in 1960, according to Dr. Henry Larzelere, M.S.U. agricultural economist, who opened the poultry day session.

He predicted egg prices of 36-38¢ a dozen to Michigan farmers in the fourth quarter of this year for Grade A large eggs sold at wholesale. This compares with a 47¢ average in 1960 for the same three-month period.

Prospects are for a 10-12% larger hatch mostly in the early months of this year, Dr. Larzelere reported. Greater egg production next fall is expected to keep prices from going up as high as they did last fall and to produce a larger difference between the prices of large and small eggs.

Dr. Charles Beer, extension farm management specialist at Michigan State University, told the poultrymen that a wise poultry farmer will not use credit unless it does the job that it is supposed to do in his poultry business.

Money and labor are both inputs, the same as feed, the poultry house and any other single factor of production, he said.

Primary purpose of credit is to use it where it can help earn more returns for labor and management, Dr. Beer pointed out. This is possible by using someone else's money as credit to expand the business to its most effective and efficient size.

Credit use can either be for long term investments over several years, or for operating capital that can be returned in a short time. Wise management is able to use credit to earn money that will pay interest and principal back when it is due with some left over for profit to increase the earnings of the individual poultry business.

In his talk, Dr. Beer said that it is important to keep in mind what priorities to put on the use of capital in order to return the largest profits. There is little difference whether this is your own capital or someone else's. A major difference is that someone else may force you to liquidate to repay their capital. You may be a more lenient lender to yourself than if you borrow from someone else, but it still is no more profitable under poor management.

Other parts of the Poultry Day program included a panel discussion, "We can Justify Getting Poultrymen Started in the Egg Business," by three feed company representatives; "What Makes the Hen Tick?" by Dr. Robert Ringer, M.S.U. poultry physiologist; a discussion of market information for consumers program of the M.S.U. Extension Service, and a look at some of the new poultry products coming on the market by Dr. L. E. Dawson, M.S.U. food science dept.

January Pullorum Disease Tests Up

WASHINGTON—Testings for pullorum disease during January rose substantially with heavy breed turkey breeders up 16% and chickens for supplying broiler hatching eggs up 20%, according to a test report of the U.S. Department of Agriculture.

The number of heavy breed turkeys tested during January was 529,054, according to the report. Heavy white breeders tested totaled 161,080, up 16% from January of 1960. Other heavy breeds, mostly broad breasted bronze, tested totaled 367,974, up 17% from January of a year earlier. Testings of light breed turkeys during January totaled 57,263, up 20% from January, 1960.

Testings of all heavy breed turkeys during the months of July, 1960, through January, 1961, of 3,647,419 were the largest of record—up 38% from this period a year earlier and up 21% from the previous high of 3,005,239 tested during the same months in 1956-57. Testings of heavy white breeds were up 67% and other heavy breeds tested were up 27%. Testings of light breed turkeys for the period July, 1960, through January, 1961, totaled 380,890, up 6% from these months a year earlier.

Testings during January of chickens for suppying broiler hatching eggs were reported at 2,679,014, up 20% from January of 1960. The cumulative total for July, 1960-January, 1961, was 16,568,842, up 2% from this period a year earlier.

Chickens tested in January, 1961, for supplying eggs for hatching egg-type chickens totaled 1,655,291, up 25% from a year earlier. For the period July, 1960-January, 1961, testings totaled 9,017,181 compared with 10,194,617 during these months a year earlier, a decrease of 12%.

CANADIAN CATTLE INCREASE

OTTAWA — The Dominion Bureau of Statistics estimates the number of cattle and calves on farms in Canada Dec. 1, 1960, to be 10,897,000. This is an increase of about 4% from the 10,489,000 head of one year ago. The rate of increase (4%) has been the same for the past two years. Most of the increase in 1960 was again due to a further build-up of beef cow numbers in the West with a generally larger carry-over of steers and calves on feed. There were 7.5% more steers Dec. 1, 1960 (963,200 head), than at the same time in 1959. Steers in the West increased 14.6% while eastern numbers rose only 2%. Calves were 6% more numerous than one year ago.

in so many 1961 layer feeds!

Low Cost—Big Returns. Arsanilic Acid is the low-cost production builder that helps hens fill more egg baskets any time of year. It costs only a couple of pennies per hen per year—costs so little your customers can't afford to be without it. In a 12-month feeding trial in Michigan, a good ration plus Arsanilic Acid produced 15.7% more eggs. Yet, an increase of only two eggs a day per 1,000 hens paid for the Arsanilic Acid.

Useful In All Types Of Feeds. Every year, more egg producers are asking for low-cost Arsanilic Acid in all their poultry feeds. Not because they're trying to replace good feeds, good management and good facilities with medication, but because they know that, under practical conditions, Arsanilic Acid-fed hens stay healthier and lay better.

Available In Two Convenient Forms. Arsanilic Acid is available in pure form or in premix form (one pound of premix is enough for one ton of complete feed). It's manufactured by Abbott and sold under the trade name PRO-GEN®. Ask your Abbott man for details, or call Abbott Laboratories, Chemical Marketing Division, North Chicago, Illinois. 101585

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The RC's are electric and operate on a rotating eccentric weight principle. They are an enclosed electric motor with rotating, cam-like weights on each end. The RC's make no more noise than a standard motor.

The AC's are similar to standard Cleveland Vibrators, except that the piston stroke is cushioned by a pocket of air. While noise is not eliminated, it is reduced to an unobjectionable level.

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Which Night to Meet?

CHICAGO—Officers, directors and committee chairmen of the Chicago Feed Club voted recently to poll their entire membership list in an effort to determine which night of the week would contribute most to members for their regular meeting night.

It was thought that many people visiting Chicago on business, either arrive Monday in anticipation of a good week's work, which would make Monday night a good time to meet; or leave Chicago Friday afternoon for their own homes, which would make Friday night a poor time to meet.

A committee headed by Russ Paarlberg, Farm Bureau Milling Co., was appointed to study the problem. Bill Harris, club president, named Hank French, Feed Age; Langdon Hoyt, Bemis Bro. Bag Co.; Lee Boyd, American Feed Manufacturers Assn., and Truman Fowler, Truman Fowler Co., to serve on the committee.

Research Appointments For Two at DPI Told

ROCHESTER, N.Y.—Two research appointments at Distillation Products Industries, a division of Eastman Kodak Co. in Rochester, have been announced by Graham C. Mees, DPI president.

Dr. J. Grove Baxter was named director of research, and Dr. Philip L. Harris, director of biochemistry laboratories.

Dr. Baxter, a graduate of Yale University, joined Kodak in 1934, as a research chemist in the department that later became DPI. He was appointed head of the organic research department at DPI in 1939.

In 1947, as a senior laboratory supervisor, he was one of the team of Kodak scientists who first synthesized vitamin A. He was named a senior research associate two years later.

Dr. Baxter was made assistant director of research in 1953, and associate director of research in 1957. He has published many articles in chemical journals about his research at DPI.

Dr. Harris, a graduate of Alma College and Pennsylvania State University, joined DPI in 1940 as supervisor of the biological research department. Before coming to Kodak, he was professor of physiological chemistry at the Medical School of the University of South Carolina.

In 1949, he became a senior research associate. In 1957, he was named assistant director of DPI research and he will continue in this post with increased responsibility as director of biochemistry laboratories.

At the University of Rochester, Dr. Harris is a part-time staff member of the medical school department of physiology. He is the author of numerous technical articles on biochemistry and nutritional effects of high-purity distilled modified fats and vitamins.

Allis-Chalmers Names Western Distributor

PORTLAND, ORE. — Reid-Strutt Co., Inc., Portland, has been appointed the first distributor for Allis-Chalmers chemical processing and food machinery.

The firm will serve Allis-Chalmers Pacific and Rocky Mountain sales regions, handling such equipment as gyratory and standard vibrating screens, flaking and roller mills, the continuous compacting process for material agglomeration, vibrating ball mills, motors, and electrical control.

Reid-Strutt Co. has sales offices in Portland, Seattle, Spokane, San Francisco, Fresno, and Nampa, Idaho; a warehouse in Portland, and a machine shop in Seattle.

Names Nutritionist

JANIATA, NEB. — Curtis Bechtel has been named head nutritionist for G & M Feed Co., Juniata, according to announcement by Arwin Mulford, general manager for the firm.

Mr. Bechtel has been field nutritionist for the company for the past six months.

Like good ideas

Good chickens are often hatched before their time...

The Nichols 108, for instance. Long before broiler production was organized as it is today Nichols' Research Staff, the most experienced in the industry, foresaw fully integrated production. They set out to develop a broiler female that would prove profitable for *everyone* from flockowner to processor . . . a female with an unique advantage, crossbred vigor. This bird, the first Nichols 108, was the result of Nichols' belief that broiler profits did not depend entirely on points spread.

This was a daring idea then, but today ask any broiler man who also produces his own hatching eggs . . . you may find that his houses are already full of 108's. He knows that broiler profits start with the breeder flock. And it's no secret that the crossbred vigor, which makes the 108 such an outstanding producer of hatching eggs, shows up in her progeny, too. The results: faster growth — all the points spread you could ask for — and a lower rate of condemnation.

A man has to know *all* of his costs to appreciate the 108 fully, but Nichols research is making it easier all the time. Today more and more important broiler men are trying the 108. Wider distribution helps and so does the new lower price, but results are the big reason. Your first flock of 108's will show you what we mean.

Nichols 108's are also available at all Nichols and Arbor Acres branches: Brunswick, Me., Skowhegan, Me., Concord, N. C., Blairsville, Ga., Dahlonega, Ga., Albertville, Ala., Carthage, Miss., Springdale, Ark., Tenaha, Tex., Thorntown, Ind., San Luis Obispo, Calif.

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Now in commercial use by farmers, SILOTRACIN again proves to be low-cost silage insurance

Thousands of satisfied users report Silotracin, new silage preservative with antibiotic action, prevents spoilage – protects proteins – stops offensive odors.

For several seasons Silotracin has been tested exhaustively both in laboratory and college field trials on grasses of all types. Now, after 12 months of everyday use on the farm, the farm reports are in. These reports confirm, emphatically, that the selective antibiotic action of Silotracin eliminates guesswork; that Silotracin reduces shrinkage, minimizes spoilage and loss of nutrients, stops offensive odors.

"Steers consumed almost twice as much" reports one farmer. "This is the most palatable silage we have ever fed" writes another. Again, "The silage has a mild, pleasant odor." These are the views of farmers who have *used* Silotracin, who have discovered for themselves how Silotracin–the first silage preservative using antibiotic action–helps make their silage more profitable.

Silotracin goes right to work as you fill the silo, works in the critical first 72 hours. It delivers these important advantages:

1 – Protects valuable forage proteins because its selective inhibition of protein-destroying bacteria reduces ammonia production.

2 – Reduces spoilage because antibiotic action encourages 'preserving' organic acids (lactic, acetic, propionic) needed for high quality silage.

3 – Ends offensive odors because butyric acid is virtually eliminated.

4 – Keeps silage fresh for many months.

5 – Antibiotic is destroyed before silage is fed – no traces appear in the milk.

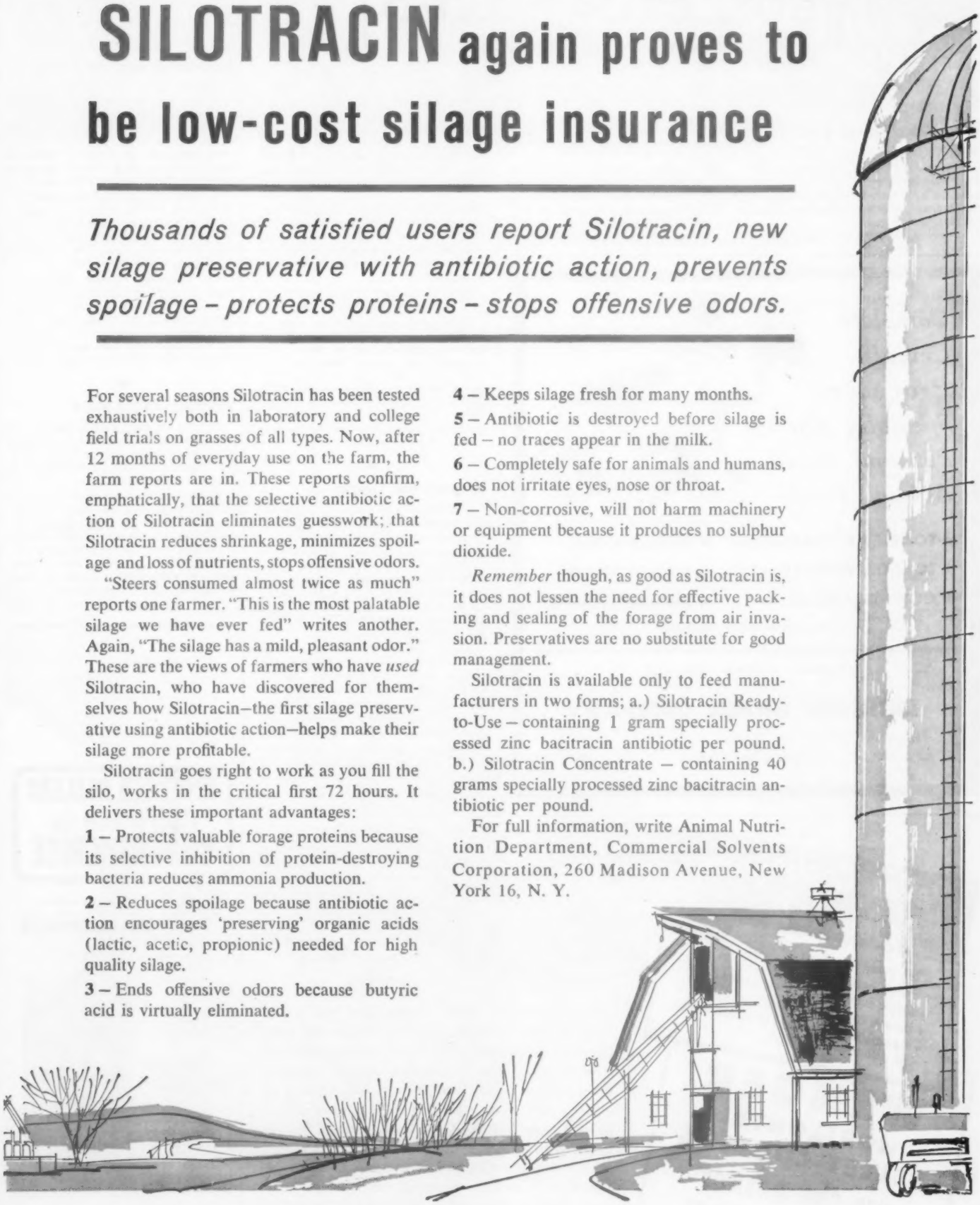
6 – Completely safe for animals and humans, does not irritate eyes, nose or throat.

7 – Non-corrosive, will not harm machinery or equipment because it produces no sulphur dioxide.

Remember though, as good as Silotracin is, it does not lessen the need for effective packing and sealing of the forage from air invasion. Preservatives are no substitute for good management.

Silotracin is available only to feed manufacturers in two forms; a.) Silotracin Ready-to-Use – containing 1 gram specially processed zinc bacitracin antibiotic per pound. b.) Silotracin Concentrate – containing 40 grams specially processed zinc bacitracin antibiotic per pound.

For full information, write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Avenue, New York 16, N. Y.



The use of Silotracin for silage preservation is covered by U.S. Patent 2,940,857.

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Overweight Hogs Cost

With corn so cheap relative to hog prices, farmers may be tempted to feed their hogs even after they have reached 220 lb. or more, says Ronald H. Bauman, Purdue University agricultural economist.

However, he cautions that farmers who do this run the risk of not getting back as much as market price for storable corn.

The Purdue economist gives this one method of figuring returns for feeding hogs to heavier weights:

First, figure the sale value of the hog when it reaches market weight of around 220 lb. Then compute the estimated total value of the hog when it reaches a heavier weight. Be sure to make realistic estimates of both hog price trends and discounts per cwt. at heavier weights. Currently with 220 lb. hogs selling at $18 cwt., 260 lb. hogs may sell at $16.50 cwt. or less when they reach that weight. Thus the 220 lb. hog brings $39.60. The 260 lb. hog sells for $42.90. Increase in value by adding 40 lb. is thus $3.30.

How much does it cost you to obtain this added $3.30 in value?

Feed cost per pound of gain in feeding hogs from 220 lb. to 260 lb. will average around 9¢ when corn brings $1 per bushel. Thus, the feed cost only is 40 lb. at 9¢ or $3.60. In this illustration, therefore, the $3.60 added feed cost increased the market value of the hog only $3.30 or 30¢ on feed cost alone was lost by feeding to the heavier weight.

◆

Prepare for Chicks

A University of Pennsylvania poultry husbandman advises growers to be ready when baby chicks arrive.

Adjust brooder stove properly, get fresh litter on the floor, have water in the fountains, have feed and grit available, and place a guard about 18 in. away from the outside edge of the hover, recommends Carl O. Dossin of the university.

There are many different ideas about feeding baby chicks, but Mr. Dossin says most growers believe they should be fed as soon as they are put into the brooder house. Most growers have drinking fountains and small feeders and new clean egg case flats spaced around the outer edge of the hover, he said. Other growers use the lids of the chick boxes as feeders. Lids are placed upside down and papers placed in them to cover the holes.

It is a common practice to allow dim lights to burn all night in the brooder house because there is less likelihood of crowding. Usually one 7½ watt bulb is used in a small colony brooder house. In larger pens one 7½ watt bulb is used for about 200 sq. ft. of floor space.

◆

Heated Water for Cows

"Dairy cows are like most other animals, particularly humans," says a University of Tennessee dairy husbandman. "In near zero weather, they prefer water with the chill off. In fact, cows will go light on water if they have to drink from a pond or stream with a break in the ice."

A 1,000 lb. cow could consume 10-14 gallons of water daily, according to Lynn Copeland, university associate dairy husbandman. That is, said Mr. Copeland, when the water is "clean, with the chill off."

Mr. Copeland advises the use of tank heaters while reminding the dairyman that water is the cheapest constituent in milk. He states that free access to good, clean water—not ice cold—will pay big dividends in more milk and bigger milk checks.

◆

Planning Egg Rooms

Having an egg storage room and refrigeration equipment of adequate size is essential to properly care for eggs produced, University of Georgia poultrymen advise.

They comment that many poultrymen have figured the size of their egg storage room and refrigeration unit based on the size of the current flock and later found that some advanced planning could have taken care of subsequent expansion and would have saved them money.

The recommendations of the uni-

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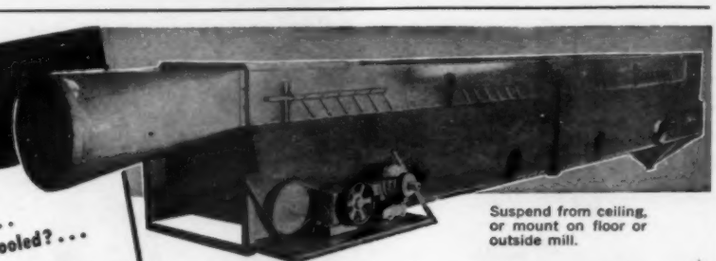

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MIDWEST PANELS—A speaker and two panels of observers who brought up questions for discussion at the Midwest Feed Manufacturers Assn. convention are pictured here. In the first photo is Dr. Robert Schoeff (left), of Kansas State University, who discussed "Making Feed at the Point of Use." Shown with Dr. Schoeff is a trade press panel which raised additional questions on farm mixing. Panel members, left to right, were Bruce Smith, The Feed Bag; W. E. Glennon, American Feed Manufacturers Assn., the moderator; Jerry Karstens, Feed Age, and Roger Berglund, Feedstuffs.

In the second photo are members of a panel which asked management questions of Edward C. Bursk, editor of the Harvard Business Review, who discussed "Management Myopia." The panel members, who were on the convention program committee, were, left to right, Quentin Marsh, Hubbard Milling Co., Mankato, Minn.; Collier Wenderoth, O.K. Feed Mills, Ft. Smith, Ark., chairman; Guy Cooper, The O. A. Cooper Co., Humboldt, Neb., and Wiley Akins, Peter Hand Foundation, Chicago.

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Today, these chicks are one day old. Today, these chicks are being injected with GALLIMYCIN, the effective antibiotic disease-fighter—now approved for use on day-old chicks.

Of course, chick health depends on good management, too...and that has to go on today and every day. Yet, GALLIMYCIN Injectable offers strong support for any poultry health program.

GALLIMYCIN Injectable combats PPLO, pleuropneumonia-like organisms now recognized as causing or complicating many respiratory diseases—such as C-R-D. In scientific studies in Ohio, tested with five other antibiotics, GALLIMYCIN proved the most active against PPLO. In other scientific studies, GALLIMYCIN has repeatedly shown far greater effectiveness against certain strains of bacteria than streptomycin or some of the broad-spectrum antibiotics.

Effective blood levels are developed in just one hour by fast-acting GALLIMYCIN Injectable—blood levels high enough to combat PPLO. And one injection usually does the job!

Cost is low in terms of results. The greater effectiveness of GALLIMYCIN Injectable makes it more economical to use. It costs less than one-half cent per chick to medicate with GALLIMYCIN Injectable—actually costs only 48¢ per hundred chicks. The survival of just one extra bird can more than pay the GALLIMYCIN health bill for a hundred chicks!

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KOCH POULTRY LABORATORIES, Gilroy, California
LLOYD NEWELL, INC. — Lancaster, California
STOCKLIN SUPPLY COMPANY — Seattle, Washington
VAN WATERS & ROGERS, INC. — San Francisco, California; Turlock, California; Salt Lake City, Utah
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TABLE 1. Approximate Size of Egg Cooler and Refrigeration Equipment for Different Size Flocks and Twice-a-Week Egg Delivery*

Size of flock (No. of birds)	Estimated daily production (cases)	Inside dimensions of cooler (WxLxH, Ft.)	Capacity cases stacked	Size refrigeration equipment
Up to 1,500	2½	4x5x5	15	¼ h.p.— 2,490 BTU/hr.
2,500	4+	4x6x7	25	⅓ h.p.— 3,240 BTU/hr.
5,000	8	6x8x7½	45	½ h.p.— 5,200 BTU/hr.
10,000	16½	8x10x7½	70	1 h.p.—11,000 BTU/hr.

Notes: Estimated production is figured at 60%. Height of cooler can be increased to 8 or 8½ ft. with no change in size of equipment.

*Bulletin N51, "Refrigerated Farm Egg Coolers," Georgia Agricultural Experiment Station.

versity on size of egg storage room and refrigeration equipment are included in Table 1.

The specialists say that it is relatively easy to calculate the size of refrigeration unit needed if the size is not listed on the table. The information calculating size follows:

First calculate the total area of walls, ceiling and floor in square feet. Multiply this by six. This will give the BTU's per hour capacity needed to overcome conduction and miscellaneous heat gain. Next multiply the number of cases of eggs or equivalent that are placed into the cooler daily times 250. This will give the BTU's per hour capacity needed for cooling the eggs. The sum of these two figures is the estimated rating of the refrigeration unit in BTU's per hour.

In determining the size refrigeration unit needed figure the running time as 16 hours of the 24.

◆

Check Protein Content

Poultry and general livestock producers who are feeding milo or corn should check the protein content of these grains if animals are not performing as expected.

This suggestion came from the University of Nebraska College of Agriculture livestock specialists amidst reports of lower protein contents in corn and milo produced in 1960.

They say recent reports indicate the protein contents of milo and corn are highly variable. If poultry and other general livestock are not performing as expected, specialists suggest getting a protein determination on the grains used in the various rations.

Soybean Group Objects To Higher Support Plan

HUDSON, IOWA—The probability of creating burdensome surpluses of soybeans and soybean products through transfer of acreage from other crops at a rate faster than the ability of the soybean industry to develop markets has been expressed here by the executive committee of the American Soybean Assn. The opinion was included in a statement regarding the feed grain program proposed by the Kennedy administration which would raise soybean supports from the present $1.85 national average to $2.30 bu. to the farmer for 1961-crop beans (Feedstuffs, Feb. 18, page 1).

Charles V. Simpson, ASA president, remarked: "It is our fear that the policy followed through the years, namely that of a free market in which our commodity has consistently sold well above support prices, may now be in jeopardy.

"Any moves by government which will upset the equilibrium established within the soybean industry through the announcement of support price levels which will make it difficult or impossible to sell our products can only result in surplus stocks, government ownership,, storage costs and the loss of years of work in the creation of markets. The transfer of the problems of feed grains to our commodity actually solves no problems, but merely transfers them from an already surplus crop to one which has made a determined effort to sell its products.

"Soybeans must be kept in their proper price relationship to crops such as corn, which compete for acreage, but they must also be kept competitive to other oilseed crops both domestic and foreign. Proposed support levels will, it is feared, stimulate production of competitive oilseed crops in other countries and cause loss of present exports as well as making it impossible to continue expansion of soybean product markets."

Mr. Simpson's final comment was "We will get needed acreage in 1961 without price supports established at too high levels. The proposed support levels might well make it impossible to continue building our markets at home and abroad, might turn our crop into just another surplus commodity in spite of the determined efforts of an industry which was not consulted in the establishment of the proposed price support levels."

ICC Rules Against Barge Lines' Rate Hikes

OMAHA, NEB. — Interstate Commerce Commission Examiner John S. Messer has ruled that barge lines cannot increase their rates on grain shipments from Omaha.

He held that rate hikes by Federal Barge Lines, Inc., and Sioux City and New Orleans Barge Lines, Inc., were not justified.

The lines had been charging a 66¢-a-ton differential between shipments from Omaha and those from Kansas City.

A new rate schedule, put into effect last July, increased the differential to $1.66.

The rate increase was protested by the Omaha Elevator Co., Consolidated Blenders & Consolidated Storage, Inc., and the Omaha Chamber of Commerce and the Omaha Grain Exchange.

The barge lines maintained that the greater differential is needed because barges from Omaha cannot be loaded as heavily as those from Kansas City since river improvements between the two cities have not been completed. The lines also said they must bring empty barges to Omaha because more traffic is moving down river than up.

The lines have until March 10 to appeal the ruling.

Spring Selling Ideas

IT'S PASTURE TIME AGAIN!

So push fast-selling Sterling Salt Blocks!

Here's a quick-in, quick-out profitmaker right now when cows are going out on pasture. These Blocks sell on sight if you display them now . . . and Sterling Trace-Mineral Blusalt Blocks help overcome the mineral deficiency of pasture grass. That's why both you and your customers should stock Sterling Salt Blocks now.

. . . and use these other profitmaking ideas

Dear Friend:
Put a salt block in your pasture
100 yards from your water supply.
Your cows will graze between them.
By moving the block, you can
control the
a sale on
C'mon in!
Fre
Dear Friend:
It's more convenient to get your
Sterling Water Softener Salt at
Freeport Feed & Seed, 2267 Post Rd.
Don't lug bags. Just back up to our
Loading Dock. We have grass seed,
weed killers and fertilizers
on sale too!
Sincerely Yours,
Tom Jones

Start a "Postcard Campaign"

Remind old customers—and new prospects—that high-producing dairy cows require up to 77 lbs. of salt per year!

FOR SALE HAY BALER
Wanted- ½ TON PICK UP TRUCK
Our Pastures are deficient in Iodine and Cobalt -- protect your herd's health by putting Sterling Trace-Mineral Blusalt Blocks in your pastures.
CHURCH SUPPER- THURSDAY EVENING

Put Up a "Swap Shop" Bulletin Board

Let your customers pin up notices. Keep all notices current (2-week limit) to maintain customer interest.

[Most pastureland is deficient in one or more trace-minerals. Your county agent can tell you about your area. Pass this vital information along.]

Build Traffic with Sterling Water Softener Salt!

Put up a sign—and you're in the water softener salt business. It's a year-round, once-a-month sale to each customer. You're used to handling bag items. Folks are used to buying them from you. You're a "natural" water softener salt dealer. Get this profitable business.

For Sterling Farm and Feed Salt products, call our District Office nearest you:
BOSTON BUFFALO CHARLOTTE CHICAGO CINCINNATI DETROIT NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH ST. LOUIS

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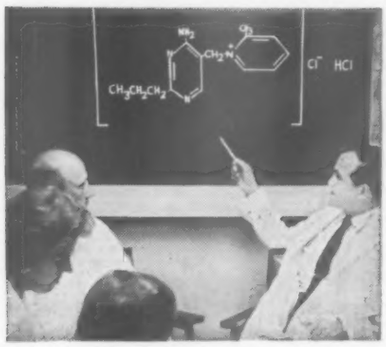

Unique CHEMICAL STRUCTURE *...new type of* ANTICOCCIDIAL ACTIVITY

NOW...FROM THE LEADER IN COCCIDIOSIS RESEARCH

AMPROL...the latest addition to the Merck family of coccidiostats...combines a highly desirable balance of efficacy and safety. Having undergone intensive study and testing under the most advanced methods, it promises to be a truly effective coccidiostat for use in broiler feeds. It is the first coccidiostat evaluated against 44 strains of seven species of coccidia.

UNIQUE ANTICOCCIDIAL ACTION

The chemical structure of AMPROL differs completely from that of any other coccidiostat in the industry's history – it is similar to that of thiamine. At recommended use levels it appears to interfere with the thiamine metabolism of the coccidia, but does *not* affect the normal thiamine metabolism of the chicken, a mode of action entirely different from any other coccidiostat.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety...plus the fact that it permits attractive weight gains and feed conversions. Tests to date have not shown any significant ability of coccidia to develop resistance to AMPROL – indicating a most promising role for years to come – in the management of coccidiosis.

EFFICACY

Exhibits important activity against major coccidia – especially *Eimeria tenella* and *E. necatrix*, under a variety of conditions. In laboratory comparisons with mixed infections of cecal and intestinal coccidiosis, AMPROL gave more protection than other coccidiostats.

PRODUCTION PERFORMANCE

Excellent growth and feed efficiency. After a year of experiments against control flocks, under practical commercial-type conditions, broilers on AMPROL showed higher final weights with favorable feed conversions.

CONSISTENT PERFORMANCE

Tested birds were exposed to four consecutive generations of ten virulent strains of *E. tenella* which did not develop significant resistance to AMPROL.

SAFETY

Well tolerated up to four times suggested use-level of 0.0125%. Side effects noted above 0.05% level are specifically related to thiamine-depletion and are quickly reversible, a simple corrective procedure unique with AMPROL. Feeding trials indicate recommended use-levels will not affect egg quality, egg production or hatchability. No toxicity observed when feeds containing AMPROL are fed to other animals.

USE-LEVELS

Recommended use-level for most field conditions is 0.0125%. Where adverse conditions and less sensitive strains of coccidia prevail, use the 0.025% level.

NOW...WITH ANTIBIOTICS

For further information, contact your Merck representative or write to Agricultural Products, Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

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MERCK

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  Fort Lyon, Ph. Las Animas 211
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  Hartman, Ph. 3
  Lamar, Ph. 336-2912
  McClave, Ph. Wiley 491
  Manzanola, Ph. Hobart 2-5571
  Wilson Jct., Ph. 1938

KANSAS
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  Deerfield, Ph. 13 F 21
  Fredonia, Ph. DR 8-2711
- Garden City, Ph. Bridges 6-3441
  Grantville, Ph. Topeka SU 9-3311
- Independence, Ph. 5
  Lakeview, Ph. Lawrence, Viking 3-4757
  LeRoy, Ph. 1
  Longton, Ph. 12
- Midland, Ph. Lawrence, Viking 3-1255

NEBRASKA
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***Free-Choice* MINERAL MIX**

Formulated with one-half special steamed bone meal . . . DARLING's mineral mix contains *6% phosphorus.* It's *all feed,* every ingredient digestible and highly available. DARLING continues to offer its *money-back guarantee* that all livestock will eat it *free choice.*

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MARCH

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

March 28—Illinois Swine Day; University of Illinois, Urbana.

Aug. 28-29—American Soybean Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

March 7—Iowa Swine Production Conference; Memorial Union, Iowa State University, Ames; Animal Husbandry Dept.

March 7-8—Grain Sorghum Research and Utilization Conference; Crystal Ballroom, Herring Hotel, Amarillo, Texas; Grain Sorghum Producers Assn., 322 Petroleum Bldg., Amarillo.

March 8—Mutual Millers & Feed Dealers Assn.; Statler-Hilton Hotel, Buffalo, N.Y.; sec., Mrs. Donald E. Mattison, Box 8, Cattaraugus, N.Y.

March 8—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 8-9—Nebraska Grain & Feed Dealers Assn.; Sheraton-Fontenelle Hotel, Omaha; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

March 10-11—Oklahoma Feed Industry Conference and Workshop; Oklahoma State University, Stillwater; chm., Dr. Rollin Thayer, Poultry Science Dept.

March 12-13—Quad-State Grain & Feed Convention; Sheraton-Martin Hotel, Sioux City, Iowa; Sioux City Grain & Feed Club, Box 341.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington, D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 23—Terminal Grain Weighmasters National Assn.; Statler Hilton Hotel, Washington, D.C.; Pres., A. E. Schultz, Toledo Board of Trade, Toledo 4, Ohio.

April 3-4—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 5—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Ext. Poultryman.

April 6—Feeders Day; University of Nebraska Experiment Station, North Platte; James C. Adams, Supt.

April 7—Missouri Livestock Day; University of Missouri, Columbia.

April 9-13—American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; sec., Carl E. Nall, 1304 7th St., Los Angeles 21, Cal.

April 14-15—Texas Grain & Feed Assn.; Baker Hotel, Dallas, Texas; sec., R. B. Bowden, 407 Fort Worth Club Bldg., Fort Worth 2.

April 17-18—Seventh Regional Area Convention, National Renderers Assn.; St. Paul Hotel, St. Paul, Minn.; sec., Harold Weiss, Gulf Soap Corp., Arabi, Louisiana.

April 20—Nebraska Beef Cattle Feeders Day; University of Nebraska, Lincoln; Dr. R. M. Koch, chairman, animal husbandry department.

April 20-22—Beef Cattle Short Course; University of Florida, Gainesville; Dr. T. J. Cunha, head, Animal Husbandry & Nutrition Dept.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

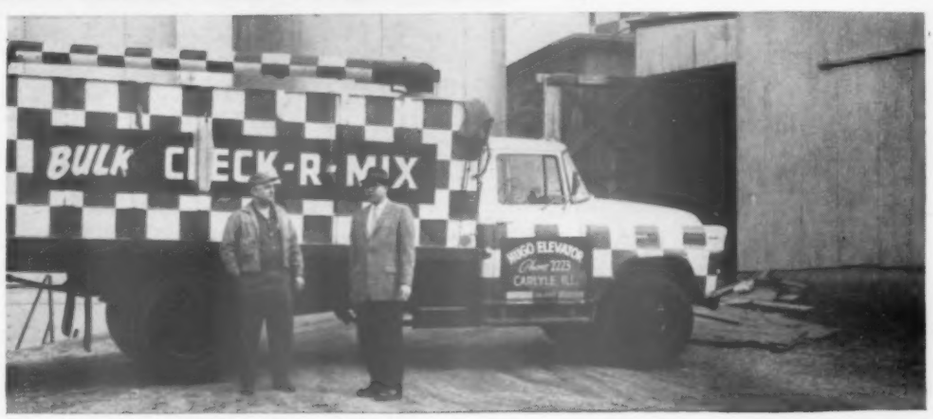
April 21—Alabama Poultry Jubilee; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Alabama Poultry Industry Assn., W. L. Walsh, Box 567, Montgomery.

April 22—Alabama Poultry Industry Promotion Dinner; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry

Meeting the challenge of the '60's with service

Purina Salesman R. F. Swoboda (right) and Dealer Martin Hugo, of Hugo Elevator, Carlyle, Illinois, study a DBM report. "This 'Sales Partnership' service has been a big help in my business," says Dealer Hugo.

DBM analyses emphasized the need for bulk Chows delivery to dairymen, stockmen and egg producers in the Carlyle market. Today, this service is reducing production costs for farmers and building tonnage for the Dealership.



DBM analysis often points way to service that helps farming

Among the valuable "Sales Partnership" functions of Purina Salesmen are Dealer Business Management analyses. This service, which many Purina Dealers say has meant thousands of dollars to them, helps both the Dealer and his customers.

Through DBM, Purina Dealers have the benefit of more than threescore years of experience in making the "feed store" into a farm service business. This confidential analysis gives them expert interpretations of the experiences of thousands of Dealerships serving all types of markets.

DBM helps Dealers with such important business factors as money management and inventory control. It often points the way to emphasizing services that mean increased income for farmers and added tonnage for the Dealership.

WHY THE PURINA FRANCHISE IS THE MOST SOUGHT RURAL RETAIL OPPORTUNITY

1. **Dealerships which follow the Purina Archway Program realize worthwhile profits on their investments.**
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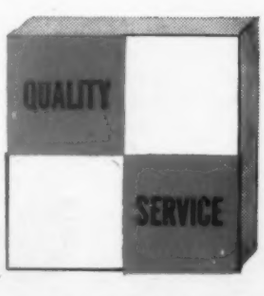
4. **There's a Purina Chow especially adapted to every livestock and poultry production situation.**
5. **Purina offers complete programs of breeding, management, sanitation and feeding.**
6. **Dealers are backed by the world's outstanding commercial research facilities.**
7. **Purina provides a complete line of research-proved sanitation products.**
8. **A coast-to-coast network of mills serves Purina Dealers.**
9. **The Purina Salesman and the Dealer have a "Sales Partnership" relationship.**
10. **The Ralston Purina Company is the world's largest feed manufacturer.**

There are progressive, independent Purina Dealers covering most areas. If you are in one of the few remaining markets where the Purina Franchise is available . . . and if you are interested in an outstanding investment opportunity, write: RALSTON PURINA COMPANY, Department F-31, St. Louis 2, Missouri.



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Assn.; sec., W. L. Walsh, Box 567, Montgomery.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, animal science department.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16—National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2—Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-17—Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

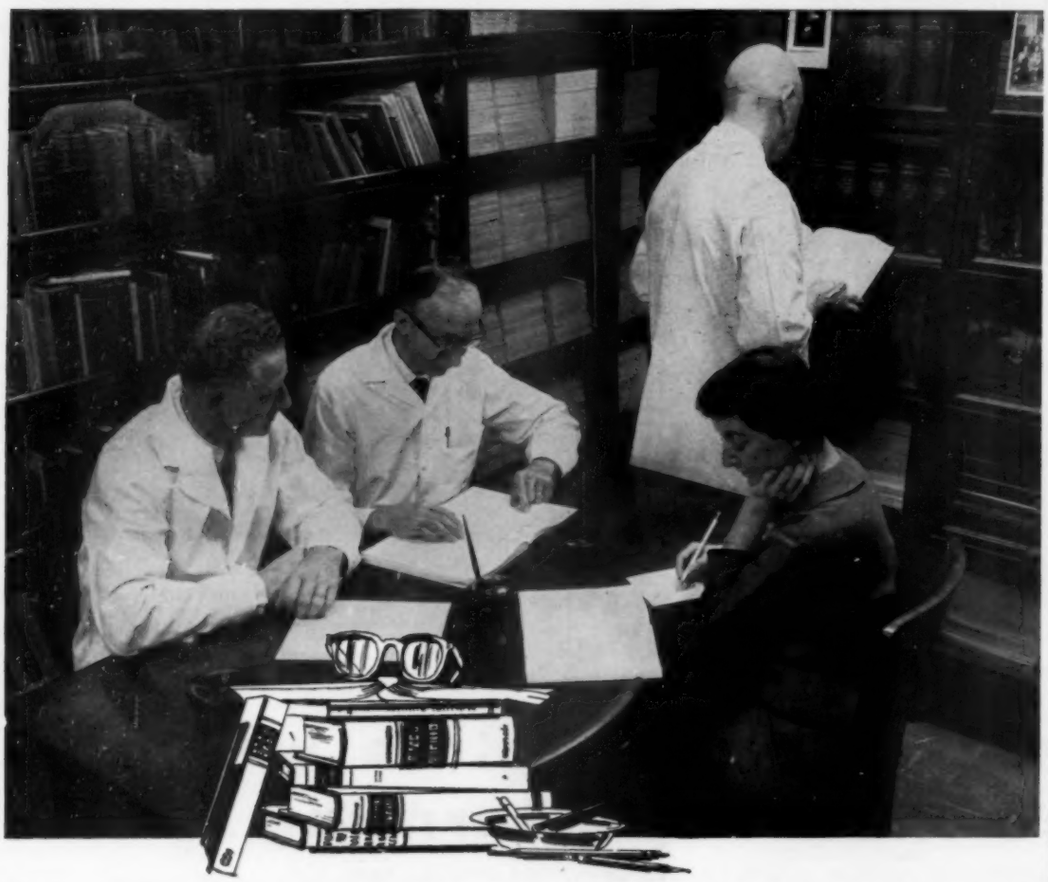
July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20



MOST IMPORTANT INGREDIENTS IN LIME CREST TRACE-MINERAL PRE-MIXES

. . . **Knowledge** — information gained from research conducted all over the world. Into the Lime Crest Research Laboratory's library come more than 80 periodicals, mostly technical, in the fields of animal and poultry science, nutrition, biochemistry, analytical chemistry and veterinary science. Some of the files cover a period of almost 35 years. This constantly-growing library is one of the best of its kind — if not the best — in the feed industry. It enables the staff of the Lime Crest Research Laboratory to keep informed of the latest developments in the field of animal nutrition — to be familiar with what has been learned in the past as well as with what is being discovered today . . . and **Experience** — Lime Crest's experience gained in making trace-mineral pre-mixes for a period of almost 25 years.

This knowledge and experience is your assurance that Lime Crest Trace-Mineral Pre-Mixes are formulated in accordance with the best information available. If you are not already using a Lime Crest Trace-Mineral Pre-Mix*, write or call us for more information . . . at least, let us send you our latest folder and price list.

**If you want a special pre-mix, we can satisfy your requirements . . . send us your specifications for a prompt quotation.*

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TRACE MINERAL PRE-MIXES

Limestone Products Corp. of America, Newton, N. J. — World's Largest Producer of Crystalline Calcite Products
Canadian Distributor: The Ash Chemical Company, 353 St. Nicholas Street, Montreal 1, Province of Quebec

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F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR FOOTED ANIMALS

2 POUNDS
Dr. SALSBURY'S
Unistat®
TON-PAK
Medicates 1 Ton of Chicken Feed
FOR COCCIDIOSIS PREVENTION, GROWTH STIMULATION, INCREASED FEED EFFICIENCY, AND BETTER PIGMENTATION IN CHICKS AND GROWING CHICKENS
DIRECTIONS
Dr. SALSBURY'S LABORATORIES

Dr. Salsbury's Unistat and 3-Nitro are now available in handy batch-size packages. Each of these TON-PAKs contain the right amount of product to medicate one ton of complete poultry ration. Supplies of the new TON-PAKs are available from your Dr. Salsbury's distributor or direct from the Dr. Salsbury's branch through which you are serviced. Once you've tried them, you are likely to keep on using them because of their many advantages.

New Ton-Pak

- Eliminate need for further premixing
- Do away with errors in weighing drugs
- Accelerate mixing operations
- Provide positive inventory control, both of drug stocks and tons of feed medicated
- Eliminate the hazard posed by opened, partially-used drug containers
- Minimize possibility of contaminating other feeds
- Allow wider drug choice at the mixing level
- Reduce total mill inventory of premixes and concentrates needed to provide different drug components

These fine Dr. Salsbury additives now available in TON-PAKs ...for your convenience

UNISTAT® The No. 1 Coccidiostat

The leading feed additive of the giant broiler industry —in the feed of over a billion birds a year. Unistat provides superior coccidiosis prevention, growth stimulation, improved feed efficiency, and better pigmentation in chicks and growing chickens. Also recommended as a valuable aid in growing replacement birds for layer flocks. Unistat is now available in cartons containing twenty-four 2-lb. TON-PAKs (48 lb. Unistat).

3-NITRO® Powder, the Growth Stimulant of Choice

Aids in stimulating growth, increasing feed efficiency and better pigmentation in chickens and turkeys; earlier egg production in chickens; better livability; increased egg production and feed efficiency in laying flocks; preventing bluecomb in turkeys; stimulating faster, more uniform growth and increasing feed efficiency in swine. 3-Nitro is now available in cartons containing forty-eight 1-lb. TON-PAKs.

Dr. SALSBURY'S LABORATORIES
Charles City — Iowa, U.S.A.

MORE THAN PRODUCTS—A SYMBOL OF SERVICE

W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place. Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 23-25 — Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

MILL OWNER, 89, DIES

LOUISVILLE, KY.—Sam Gregory, 89, retired former owner of a milling company and handler of feeds, grain, seeds, etc., died at his home in Lewisport where he formerly operated the Lewisport Milling Co.

Layers given Serpasil® Premix in feed consistently outproduce controls when both are subjected to heat stress

No. in Medicated Group—5,091
No. in Control Group—6,818
½ ppm.

Dates 1959	Mean Temperature	Production Rate % Control Group	Production Rate % Medicated Group	Mortality Rate % Control Group	Mortality Rate % Medicated Group
July 14-31	102°F.	63.56	67.37	0.70	0.37 (19 birds)
August 1-31	98.2°F.	65.44	69.16	0.90	0.58 (29 birds)
September 1-30	94.2°F.	65.13	67.62	0.56	0.44 (22 birds)

(After Parker*)

In a field trial in Arizona* during three hot summer months, the egg production of birds given feed containing SERPASIL® (reserpine CIBA) was consistently higher than that of the untreated control group, and the mortality rate also was considerably lower in the medicated group. *Moreover, the hens on medicated feed had a higher egg production rate than the average production rate of hens on neighboring farms.* The results of this trial are summarized in the accompanying table.

SERPASIL Premix is the only feed additive which actually shields the nervous system of birds against harmful reactions to stress, such as extreme heat and cold, vaccination, caging, debeaking, crowding, spraying. SERPASIL Premix means more profitable operations to poultry raisers and to egg producers.

CIBA Pharmaceutical Products Inc., Animal Health Marketing Division
P. O. Box 313, Summit, New Jersey

Distributed by: Merck & Company, Inc., Chemical Division, Rahway, N. J., and The Ray Ewing Company, Pasadena, Calif., Lancaster, Pa., Fort Worth, Texas, Cedar Bluff, Ia.
In Canada, SERPASIL Premix is manufactured by CIBA COMPANY LIMITED, DORVAL, QUEBEC.

*Parker, E. L.: Paper presented at The Second Conference on the Use of Reserpine in Poultry Production, The Institute of Agriculture, University of Minnesota, St. Paul, Minn., May 6, 1960.

CIBA

SERPASIL® Premix (reserpine premix CIBA) 2/2859FK

March 8 Is Date for Georgia Short Course On Poultry Diseases

ATHENS, GA. — Respiratory diseases will get a lot of emphasis at the Poultry Disease Short Course to be held at the School of Veterinary Medicine, University of Georgia, Athens, March 8.

Following 8 a.m. registration and introductions, Dr. Charles N. Dobbins, Jr., head, extension veterinary department, agricultural extension service, University of Georgia, will open the morning program with a discussion of "Sanitation and Disinfectants."

He will be followed by Milton Y. Dendy, extension poultryman, agricultural extension service, University of Georgia, who will speak on "Environment in Relation to Respiratory Problems."

"Vaccines and Vaccination—Principles and Problems" is the next speaker's topic. It will be delivered by Dr. Dale J. Richey, associate poultry microbiologist, Poultry Disease Research Center, University of Georgia.

Capping the morning program of speakers will be Dr. Don E. Davis, head, Poultry Diagnostic Laboratory, School of Veterinary Medicine, University of Georgia. Dr. Davis' talk is entitled "Observations Servicemen Should Make on Farm Visits."

Following the noon luncheon, at which Dr. Dobbins will preside, poultrymen will hear Dr. Max Colwell, Georgia Poultry Diagnostic Laboratory, Gainesville, speak on "Postmortem Techniques and Problems."

Next speaker will be Dr. Dank Morris, head, Georgia Poultry Diagnostic Laboratory, Gainesville, whose speech is entitled "Utilization of Diagnostic Laboratory Facilities and Information."

The third afternoon speaker will be Dr. William E. Clarke, Georgia Poultry Diagnostic Laboratory, Gainesville, who will discuss "Condemnations and Respiratory Disease Problems."

"Summary of Common Respiratory Diseases" will be presented by Dr. S. C. Schmittle, director, Poultry Disease Research Center, University of Georgia.

The last afternoon session will be devoted to a discussion of material that has been presented during the day-long program.

Earnings at New High

NEW YORK — Borden Co. 1960 earnings rose to a new high for the fifth successive year. Sales also set a new record, topping the previous high established in 1959, it was reported.

Earnings were $26,856,250, up 5.1% from the 1959 figure of $25,548,693. Earnings per share in 1960 were $2.71 on the 9,907,500 shares outstanding Dec. 31. This compares with $2.61 a share in 1959 on 9,800,000 shares outstanding after adjustment for a two-for-one stock split Jan. 5, 1960.

Sales of $956,014,030 exceeded the previous $941,326,495 high of 1959 by about 1.6%.

Federal income taxes were $24,405,347 for 1960, compared with $23,728,749 the year before.

NEW FEED MILL

CLOVERDALE, VA. — Cloverdale (Va.) Mills, Inc., has filed articles of incorporation listing $50,000 authorized capitalization to operate a mill, manufacture and produce flour, meal, livestock feed and similar products.

PROTEIN BLOCKS
Also
MINERAL BLOCKS
WRITE FOR PRICES
FARMERS FRIEND MINERAL CO.
NAPOLEON, OHIO

when you raise a thousand pigs on rations containing Borden's Fermacto 400

For each one-thousand pigs raised on rations containing Fermacto 400—swine growers can save **up to one car of feed.** Now, after years of Borden's Research and testing, comes this significant reduction in feed consumption that can help increase your hog feed tonnage by lowering production cost.

Pigs fed rations containing Fermacto 400—Borden's concentrated and standardized source of multiple fermentation factors—gained faster on less feed than those on the control diet—in fact, **20** pounds less feed for each hundred pounds gain.

The low level of Fermacto 400—0.25% (5 pounds per ton of feed) supplied the extra factors—making this improved efficiency possible.

Call today for Fermacto 400 price quotations, brochure and test data, as well as information about our complete pig and swine-feed fortification products, **KREPRO** & **HOPRO.** These quality products can help you build a complete line of quality feeds for all phases of swine feeding.

orden's feed supplements division
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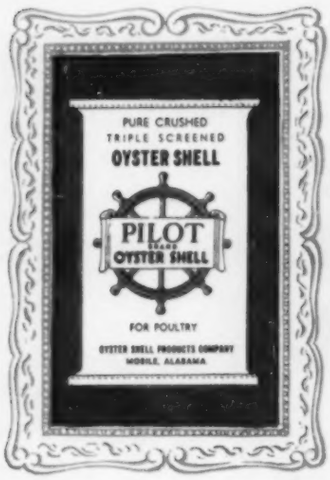
Better products through Borden research



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PILOT BRAND OYSTER SHELL

PILOT BRAND Oyster Shell is a profit maker every month in every year. There's never a slack season.

That's because poultrymen everywhere depend on PILOT BRAND to help them get more eggs with stronger shells.

Dealers, coast-to-coast, know that it pays to stock and promote PILOT BRAND, the largest-selling eggshell material in the world. You can always count on PILOT BRAND for quick, easy sales and good, steady profits. And we help you with consistent, hard-selling national advertising in leading farm and poultry publications and on more than 70 radio stations.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

MULTI-PURPOSE PLANT—Here's an aerial view of Central Soya's multi-purpose plant at Chicago, which includes a 2¼-million-bushel storage elevator and facilities for soybean processing, soya flour manufacturing, and production of soybean Lecithin and edible and industrial proteins. Central Soya has leased these facilities for the past two and one half years, but will exercise an option to buy them next Sept. 1 as part of a purchase of the Glidden Co.'s Chemurgy division.

Oregon Association Names Jim McDowell Presidential Candidate

PORTLAND, ORE.—The nominating committee of the Oregon Feed & Seed Dealers Assn. has named Jim McDowell, McDowell Bag Co. here as candidate for president for the 1961-62 term. Currently association vice president, Mr. McDowell, if elected, will succeed Alec Runciman, Webfoot Fertilizer Co. here.

Nominated for the position of vice president is Stan Cellers, Buchanan-Cellers Grain Co., McMinnville. Howard Jenks, Jr., current association secretary-treasurer, and who would normally advance to the office of vice president, has submitted his resignation due to the press of business. Named for the office of secretary-treasurer is Randall (Bud) Cook, The Leo Cook Co. here.

Candidates nominated to the board of governors are: Representative of the Portland wholesale feed manufacturers, Pat Driscoll, Albers Milling Co.; representative of Portland area jobbers, Dave Lees, Lees-Carney Co.; representative of Portland area retailers, Linn Schrock, Milkiewa Feed Mills, Milwaukie, Ore.; representative of allied tradesmen, Jim Wells, Chase Bag Co.; governor-at-large, Jim Jenks, Jr., Jenks-White Seed Co., Albany, Ore.

Remaining members of the board of governors will be made up of the newly-elected district governors of the association's five state-wide districts.

The nominating committee also recommended to the association board of governors that the organization amend its by-laws to include the chairman of the seed committee as a member of the board. The board is currently considering this recommendation, and, if approved, it will be placed before the membership for balloting, at the same time that new officers are voted on during the business meeting at the annual meeting March 16-17 at the Portland-Sheraton Hotel.

The nominating committee consisted of four past presidents of the association and the current president. These were Ed Wyss, Fred Trullinger. Fenn Emerson, Harold Davis and Mr. Runciman.

KEES & COMPANY
Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
327 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1528

Poultry Publication

DECATUR, GA.—The Southeastern Poultry & Egg Assn. is beginning twice-monthly publication of a specialized management newsletter, "Southeastern President," Norman Sanders, Columbia, S.C., has announced.

"This newsletter will contain specialized information of value to the management level in the poultry industry," Mr. Sanders stated. "It was made a part of the Southeastern program following a study by the board of directors on information desired by members of the industry."

It is not intended to duplicate information available in the trade press, it was pointed out, but will supplement it in fields of management information.

DESIGNED *Exclusively* FOR FEED DELIVERY SERVICE

YOU CAN AXLE MORE PAYLOAD — DRIVERS LIKE SIMPLE OPERATION

- Capacities from 5 tons and up in single or tandem axle models.
- Closed, heavy-duty hydraulic drive system means years of trouble-free service.
- Unloads hard-to-handle feeds up to 800 lbs. per minute — Easy-to-handle grains up to 1,500 lbs. per minute.
- Built of 12 ga. steel — All welded construction.
- Free "360 degree" swinging auger — reaches 21 ft. bin.
- Individual hydraulic drive on each auger makes clearing any jammed auger easier.
- Variable speed, hydraulically driven bottom auger reduces pellet crushing to a minimum.
- Special compartment door design reduces bridging.
- Two or more compartments — Tarp or steel top optional.
- Catwalks and ladder standard equipment.
- Pit unloading with bottom auger only.

WRITE, WIRE OR PHONE COLLECT for further information about the Simonsen V-50 series of bulk feed bodies, PLUS a full line of other bulk feed bodies, combination bulk and sack bodies, unloaders to fit your present truck box, bulk fertilizer spreaders, and the NEW Simonsen Feedilizer, a bulk feed and bulk fertilizer body.

SIMONSEN MANUFACTURING CO.
DEPT. FS QUIMBY, IOWA PHONE 72

HEADQUARTERS
MAGNAVAM FEED ADDITIVES
Few Equal, None Excel
HOLT PRODUCTS CO.
Box 840, Milwaukee 1, Wisconsin

"You're the one who ordered the carload of rabbit feed?"

Commercial Solvents Appointment Told

NEW YORK — Appointment of Robert Schoeneshoefer to a position with the animal nutrition sales department of Commercial Solvents Corp. has been announced by I. Roy Cohen, manager of the department.

R. Schoeneshoefer

A native of Missouri, Mr. Schoeneshoefer received his B.S. degree in agriculture from the University of Missouri. He has been assigned to the western sales district under Norman Stark, district manager. Now Mr. Schoeneshoefer will be resident sales representative in Denver handling Baciferm — CSC's zinc bacitracin animal feed supplements— along with other CSC products for feed industry.

He will service accounts in the states of Colorado, Wyoming, Montana, New Mexico and Utah. To meet the needs of the expanding use of antibiotics in cattle feeding, Mr. Schoeneshoefer will also cover cattle feeding lots in those states, the announcement stated.

Peavey Feed Mills Holds Sales Meeting

MINNEAPOLIS — "Profit Planning" was the theme of the annual spring sales meeting sponsored by Peavey Feed Mills, manufacturers of Tone feed, in Minneapolis. It was attended by district sales managers from six upper Midwest states.

A program through which Tone dealers can help customers profitwise was outlined by L. J. Scribner, sales manager.

Methods of serving growing feeders and dealers as well as the dynamic changes in livestock were discussed at the meeting. Also featured on the program was the importance of better business management for better feed service. Introduced at the session was the feed profit planner for hogs and laying flocks.

Peavey staff members leading discussion sessions were: W. D. Bynell, F. T. Heffelfinger II, J. R. Lindell, L. J. Scribner, Pernell T. Reitan, Myron Carpenter, J. R. Adams, and Victor Jorges.

Shipments of Feed In Canada Increase

OTTAWA—Shipments of primary or concentrated feeds in November, 1960, in Canada rose to 42,691 tons from 41,913 in the corresponding month of 1959, and secondary or complete feeds to 231,095 tons from 217,206, while all other animal feeds fell to 52,343 tons from 54,351, it was reported.

January-November shipments were smaller than a year earlier for the three categories, and were as follows: Primary feeds, 397,237 tons (421,379 a year earlier); secondary feeds, 2,299,928 (2,373,228); and all other animal feeds, 503,921 (523,314).

$100,000 IOWA BLAZE

MISSOURI VALLEY, IOWA—The main building of the Valley Mill, a grain elevator and feed mill in Missouri Valley, was destroyed by fire recently.

THE BEST BOILER FOR PELLET FEED PLANTS—

SUPERIOR Scotch Marine BOILER

HERE'S WHY—

- Compact. Saves Space.
- Mounted on Heavy Metal Skids. No Special Foundation Needed.
- Easy to Clean and Inspect. Gas or Oil Fired.
- All necessary piping and valves in place to reduce wiring, plumbing and other installation charges.
- Easy to Operate. Fully Automatic. Best Design for All Types Water.

Hundreds in Use in Feed Industry. Write for Full Details and Special Bulletin.

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CK is OK for Profit...Service...Quality

Don't Mix Without CK Econolass

(85% feeding Cane Molasses Equivalent — Dehydrated on Soybean Mill Feed)

Why? Because CK Econolass is economical AND is of uniformly high quality. In fact, you can't buy a better dry blackstrap molasses feed ingredient.

You'll like the ease with which Econolass mixes, and you'll like the convenience of the moisture-resistant 50 lb. bags.

You'll like the FAST service your orders get from CK—and your customers will like the fast, healthy gains your feeds provide with the added palatability of Econolass.

Profits Go Up With Econolass in Your Feed

The CK Line of quality feed ingredients includes —

- Econosol — Fish solubles dried on soymeal.
- New Econoloc — Soyoil and lecithin carried on soymeal.

CK Processing Company

REDFIELD, IOWA MUSCATINE, IOWA

The Best Friend Your Feed Ever Had

B&L MOBILE EQUIPMENT AT ITS BEST!

ONE-MAN OPERATION ONE POWER UNIT

(GAS OR DIESEL)

Write For Details

THE B&L MOBILE

BARNARD & LEAS Manufacturing Company INC.

CEDAR RAPIDS, IOWA

BE KING OF THE WEATHER

Own an

ARID-AIRE GRAIN DRYER

You rule the weather when you operate an ARID-AIRE Grain Dryer. No matter what the moisture content . . . no matter what the grain—ARID-AIRE Grain Dryer masters the moisture problem, lets you take high moisture grain and dry it evenly, gently, quickly. Write for full information about easy-to-own, easy-to-use ARID-AIRE Grain Dryers.

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SERPASIL®
brand of reserpine is the first Tranquilizing agent accepted for use in CHICKEN and TURKEY FEEDS

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FEEDSTUFFS
A WEEKLY NEWSPAPER
For the Feed Manufacturer, Feed Jobber
Feed Broker and Feed Dealer

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JOE BROOKS

BY AL P. NELSON

It's Easy to Say Thank You

Stocky Ed Eggers, manager of Joe's branch feed mill at Endeavor, 10 miles south of Hansen's Creek, came into Joe's office late one March afternoon. He wore a gray mackinaw and rounded grey hat and his big galoshes were unbuckled.

"Hi, Ed," greeted Joe. "How are things?"

"Fine," grinned the hard working Eggers, "we just finished unloading that car, and I came up to pick up some block salt. We're out."

Ed Eggers sat down in a captain's chair and lighted a cigarette. "Joe," he said, "I've got an idea. Got time to listen?"

Joe leaned back in his swivel chair and locked his broad hands behind his head. "Are you kidding, Ed?" he grinned. "You know I like ideas almost better than a rising profit curve."

"I know how you feel, Joe," he said. "Ever since you put me on a managerial profit sharing basis, I feel like I got new stuff in my blood. Man, do I feel good."

"Incentive," Joe smiled. "That's what all of us want, whether we admit it or not. Something to make us rarin' to go. Incentive is what makes life interesting, in America at least. Now, what is your idea, Ed?"

The stocky feed man chuckled. "Joe, how would you like to get 100% performance out of a sales tool that we are not using very much, a tool that doesn't cost us one red cent,"

Joe blinked, then grinned sheepishly. "You mean we've got a sales tool that isn't costing us anything, and we are not making the best use of it?"

Thank You

Ed Eggers nodded. "Yup. We don't put enough emphasis upon two of the best business building words that any business man can use."

"What are they?"

"Thank you!" grinned Ed impishly.

Again Joe blinked. "We do thank our customers, every one of them," he said. "At least I hope so. If we don't, we should."

"Joe," said Mr. Eggers, "when my wife and I went to her relative's funeral in Kentucky last week, we went into a store to buy a present for the kids of Millie's relatives where we stayed. The fellow who waited on us was a peach of a guy, smiling, helpful. And when he handed us the package, he said, 'Thank you! Come back with us!'"

Joe said nothing, but he was thinking hard.

"That man and his manner and his words stuck with me, Joe. In this state we wouldn't want to say 'come back with us' for it'd be foreign to our customers. But we can still say 'thank you'."

Joe frowned a little. "How can we say thank you any more than we are now doing, Ed?"

Thank You Ideas

Ed Eggers drew a piece of paper from his mackinaw pocket. "I jotted down some ideas, Joe. First, on every statement we mail a customer we should either stamp or have printed on it 'We thank you for your patronage'."

Joe nodded in agreement.

"And when a farmer pays his bill and we give him a receipt, the words 'thank you' ought to be written on it.

"And when a farmer steps up to the counter and places an order, we should say 'thank you' when we take it and make arrangements to have it processed, or delivered. Maybe we don't always do this."

"If we don't, we should, Ed," said Joe. "Go on."

"Every ad we issue, in newspapers, or direct mail or what," said Ed, "we should thank customers for their patronage."

"And how about a 'We thank you for your patronage' on the back of our delivery trucks," Joe suggested. "Many farmers would see that."

"Fine," replied Ed enthusiastically. "And we ought to have a 'Thank You' sign on every door that leads out of the mill and store, so farmers know we are very happy that they came to us to buy."

"That must be what the smart advertising boys in the big cities call 'subliminal advertising,'" Joe said.

It's Sweet Music

"I don't care what they call it," pointed out Mr. Eggers, "but it works. At least in this case, Joe, all

12¢ A HEAD CAN BUY AN EXTRA 41-POUND GAIN IN 4 MONTHS!
Incredible as it sounds, these facts were proved in a pasture feeding trial at Kenyon Farms, Mineral Point, Wisconsin:
During a 120-day pasture period, cattle fed Morton Trace-Mineralized Salt free-choice gained an average of 41 pounds more than cattle fed plain salt . . . and yet the extra cost of the Morton T-M Salt used over the entire four month period only added up to 12¢ a head!
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REMEMBER THIS AD...YOUR CUSTOMERS WILL! Here's dramatic proof that Morton T-M Salt puts gain on faster, for less cost! This ad, appearing in FARM JOURNAL, SUCCESSFUL FARMING, FARM QUARTERLY, AMERICAN LIVESTOCK JOURNAL, NATIONAL LIVESTOCK PRODUCER, and leading state farm magazines, tells the story—puts you in position to close the sale! Your customers will appreciate your reminding them—and they'll be back regularly to do more business with you. Morton T-M Salt is a top-quality product you can recommend with confidence. What's more, it's up to thirty percent more profitable for you! HIGHER PROFIT FOR YOU...FASTER GAIN FOR YOUR CUSTOMERS.

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Dehydrated Alfalfa

of us like to be thanked. It is mighty sweet music in our ears."

"It certainly is," Joe declared. "Think of all the marriages that would be happier if husbands and wives began thanking each other for little favors and courtesies."

"You said it," grinned Ed. "I think I'll try it myself."

Joe reached for a pencil. "Ed, I am mighty glad you brought this 'thank you' business to my attention. I am afraid we have been overlooking it somewhat. In this competitive age, we business men sometimes look for the spectacular and the different things to get more business for us. But the simple things, when handled right, will often do the same thing."

"The good feeling like being thanked never loses its charm," Ed said.

"And in this day when so many feed companies have quality feeds and services that are on a par, a little thing like consideration for a customer and thanking him sincerely for his business, may swing extra customers our way."

"We can't lose by trying it," Ed said. "It costs nothing but a little time at a sales training meeting to alert all of us."

"And that we'll do," Joe said. "Why don't you and I start thanking people every chance we get—employees, customers and our wives. Then we'll have up-to-date experience to relate to the fellows at the meeting."

"Okay," grinned Ed happily. He got to his feet. "I've got to go now. And thank you very much, Mr. Brooks, for giving me the time to tell you of my idea. And thank you for considering it."

"It is I who want to thank you, Ed," smiled Joe, "for bringing us such a fine idea. And thank you and your boys for doing such an excellent job of representing us at the Endeavor mill."

Saluting smartly, Ed grinned and went out the door.

Iowans Hear Report On Animal Disease Lab

DES MOINES — Twenty simultaneous research projects will be under way when the new animal disease laboratory near Ames, Iowa, gets into full operation. Dr. William A. Hagan, director, told the agricultural committee of the Greater Des Moines committee here. He said the laboratory will probably be in operation by next July.

He said research work primarily will be on diseases of cattle, swine and poultry, with some work on diseases of sheep. He said a total of 125 scientists will be employed at the laboratory, with about 350 other employees.

A staff of 50 scientists from Beltsville, Md., will be on duty by next June, the rest of the staff to be recruited. Research at the outset will focus on some of the common diseases such as bovine tuberculosis, hog cholera and leptospirosis, he said.

Later work will center on the uncommon diseases. He estimated the laboratory will cost the U.S. Department of Agriculture about $16 million.

There will be about 35 buildings on the 318-acre tract northeast of Ames with 32 separate laboratories in the main building.

Jud Neighbers Joins Critic Feeds Division

BEARDSTOWN, ILL.—Jud P. Neighbers, Effingham, Ill., has been appointed to the position of territory manager by Critic Feeds division of The Beardstown (Ill.) Mills Company. The appointment was announced by Robert G. Fischer, general sales manager, at a southern division sales meeting held recently at the Missouri Athletic Club, St. Louis. Mr. Neighbers has a background of seven years in the formula feed industry, most of it in the sales field. He was raised on a western Oklahoma ranch. His area of responsibility for Critic Feeds will be in south central Illinois.

Jud Neighbers

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No. of rows each floor.....
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Capacity..... lbs.

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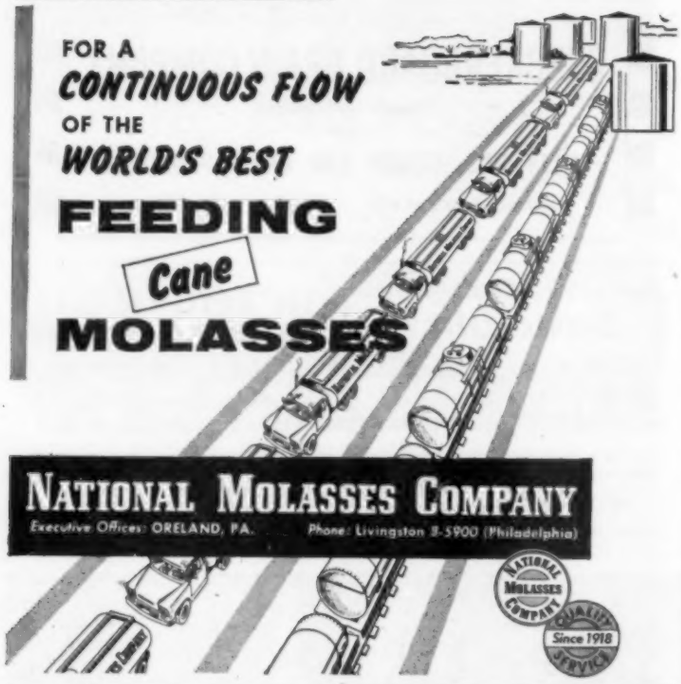

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Bean Future Price Still Far Under Mark Set in 1948

By F. C. BISSON
Feedstuffs Special Correspondent

CHICAGO—The Chicago soybean futures contract is 24 years old, but after one deducts the "trading recess" during most of World War II (an executive order made it virtually illegal for any one to buy or sell that commodity other than processors, growers and seed dealers), it is a mere stripling of some 20 years. Volume of trade has advanced by leaps and bounds over the years, particularly during the past three months when prices advanced about 50¢ bu. New daily high record activity has been scored and the open commitment (or open interest as it is generally referred to in the trade) has broken through the quarter billion bushel level on several occasions during the current month.

While new high prices for the season have been set up at around $2.80 for the July delivery, this is a mighty long way from the all-time high figure for any soybean future at Chicago. The record of $4.36½ for May delivery was set in January, 1948. The soybean crop of 186,471,000 bu. being marketed at the time was somewhat smaller than the crop just preceding it. And it was the last time that production was less than 200 million bushels. The crop harvested last fall was about three times larger.

Big Expansion

The entry of the U.S. into World War II was the signal for a big broad expansion in soybean production. Prior to 1942, the first full year of the war insofar as this country was concerned, the bean crop amounted to 187 million bushels, an increase of about 75% over the year before. This came about in a government effort to increase the world supply of fats and oils to meet war economy needs.

With the exception of one year—1959—the carryover of soybeans into the next crop has always been a very moderate one. Last Oct. 1 the government estimated the carryover at 23 million. With a new crop of 558 million, this provided an overall supply of 581 million bushels to take care of crushing, export, seed and carryover needs into the 1961-62 crop year.

Processors disposed of close to 11 million bushels during the October-December, 1960, quarter which was about 5 million bushels larger than last year's first quarter. Official figures covering exports to Feb. 10 this year account for another 72 million bushels or approximately 7 million bushels more than during the corresponding period a year earlier.

Crush Report Due

While the Census Bureau figures covering bean crushings during January are not yet available, there is a feeling in trade circles that they will exceed the December record total of 37½ million bushels. A year ago, the crush for that month was 33,893,000. Assuming a January, 1961, crush of 38 millions, this would mean processor disappearance for the first four months of about 148 million bushels or about 9 million bushels in excess of last year's similar four-month period.

Looking at the potential export picture, it would appear as though it might be possible to have a further pickup in clearances between now and the reopening of navigation over the same 11-week period last year. From Feb. 19 through April 30, 1960, soybean exports amounted to only 16,842,000 bu.—a weekly average of just a trifle over 1½ million bushels. Some tradesmen are of the opinion that such an average could be an easy target to beat. It has to be remembered, of course, that a year ago soybean prices were much lower than currently. Using the track Chicago price in each case, beans are currently about 55¢ bu. higher and this could well be an item that would tend to circumscribe exports to such an extent that at the opening of lake navigation this spring our export total may not have gained over last season's at the same rate as has been the case since Oct. 1.

Looking still farther ahead, i. e., beyond the reopening of lake navigation around May 1, it will be seen that in order for our week-to-week soybean exports to hold the present advantage over the same period the year previous, the movement will have to be stepped up considerably as compared with what they may be expected to show up to the end of April. For instance, from May 6 through June 3, 1960 (only five

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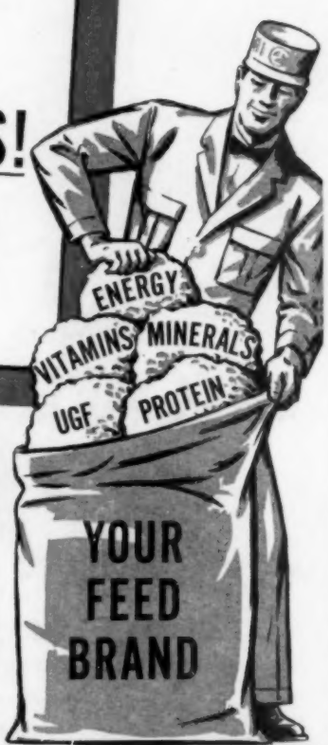

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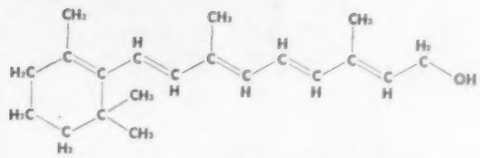

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WASHINGTON CONVENTION—In the first picture are new officers of the Washington State Feed Assn., elected at the group's annual convention in Bellingham. Left to right are Ray Whitcomb, Bleyhl's, Inc., Grandview, secretary-treasurer; Arthur R. Hill, Arthur R. Hill, Inc., Seattle, president, and Mel Erickson, Nordquist Feed Mills, Redmond, vice president.

In the second picture are some of the panel members who spoke at the meeting. Left to right are Oakley Ray, American Feed Manufacturers Assn.; Dick Beeler, Western Feed & Seed; Henry Fors, Fors Feed Mills, and Len Hitchman, Ralston Purina Co., moderator. Panel members not shown were Dr. H. S. Wilgus, Ray Ewing Co., and Roger Berglund, Feedstuffs (who was behind the camera).

In the third photo are Bob Campbell, Leslie Salt Co., general convention chairman; J. G. Wilson, association manager; Walter Van Horne, J. W. Feed Co., retiring president, and Leo Westerbeck, Western Condensing Co., assistant general chairman of the meeting.

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weeks), we exported 14,808,000 bu. for a weekly average of 2,961,000, or almost twice as large as during the previous 11-week period.

Much depends on competition from Manchurian beans between now and early June; that, and the matter of the price at which U.S. soybeans are made available to our foreign trade. There still is a marked difference of opinion as to what extent Red China is in a position to fill Continental requirements. Those who claim that the Manchurian soybean crop was not decimated the way that large areas of other crops in other parts of China were, are solidly arrayed against those who believe that the soybean crop in that country was badly hurt.

Recent activity in soybean futures has featured some narrowing in the discounts for September and the other new crop deliveries under the March, May and July old crop positions—the spread being narrowed by about a nickel per bushel. All three new crop bean futures have set new seasonal highs. A portion of the recovery in the more distant deliveries was attributed to reports that the administration had been "sold" on the idea of boosting the support level for the 1961 bean crop from $1.85 as it is currently, to as much as $2.30 bu. (Feedstuffs, Feb. 18). Curiously enough, credit for this idea was being given to an Iowa hybrid corn seed producer who, it is said, is in favor of leaving the national farm corn support price at $1.06 but by means of a 50¢ bu. hike in the soybean support, acreage might be diverted from corn to soybeans.

The general belief is that soybean processors are unalterably opposed to any such action and logic would seem to dictate that if the Congress is going to listen to anyone on a matter of this kind, it is much more likely to be the industry that would be directly concerned rather than someone engaged in the production of seed corn.

A soybean processor having a substantial number of plants in various sections of the bean area has announced that the plants are being shut down temporarily on account of the unfavorable conversion ratio. March meal has advanced strongly. But oil has been decidedly draggy and has shown but little inclination to follow the upward trend of the other product.

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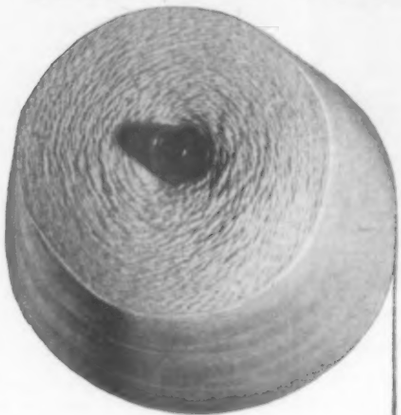

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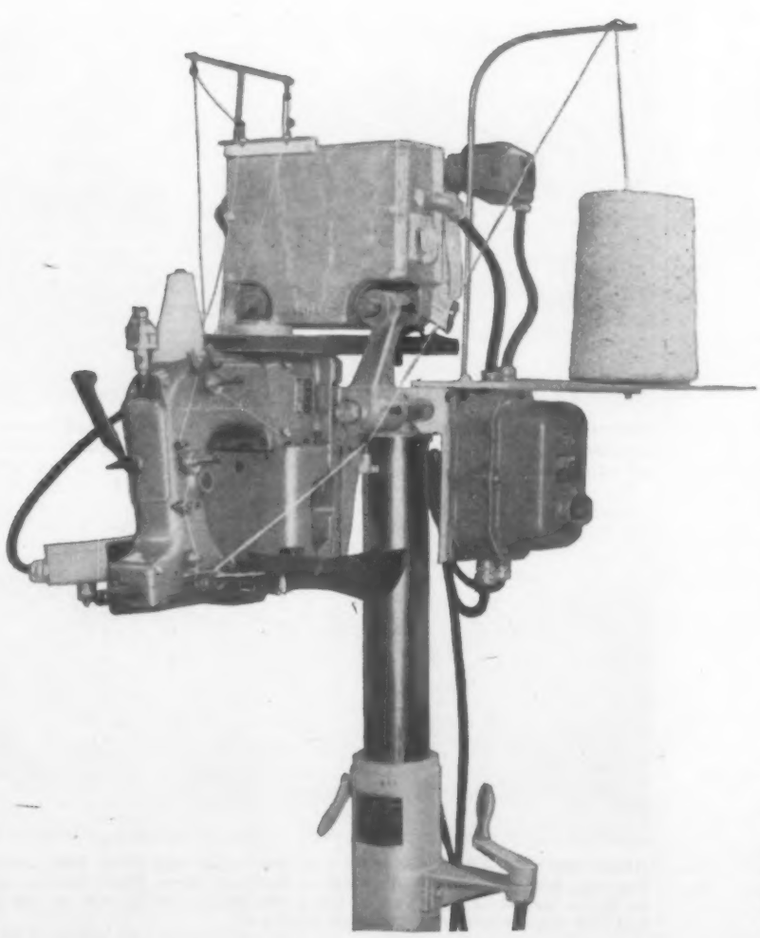

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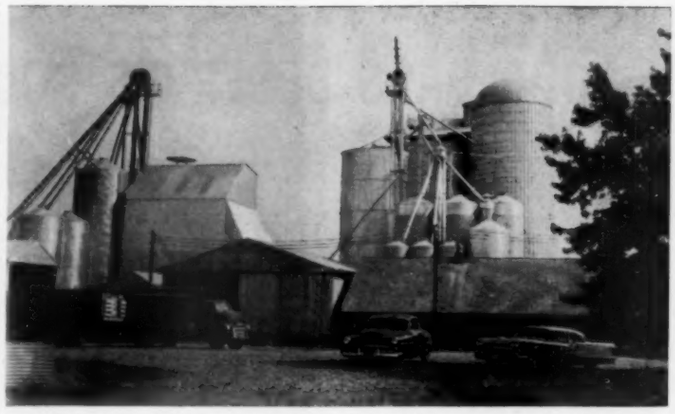

FEED MILL—Five Martin brothers operate this feed mill and these grain and feed storage facilities on their 300-acre farm near Roanoke, Ill. Their $250,000 pellet mill turns out feed for cattle fed by many customers and for 2,600 head of their own. The cattle serve as a demonstration herd.

5 Illinois Brothers Show Feed Customers How With Herd of 2,600 Beef Cattle

By Al P. Nelson
Feedstuffs Special Writer

Many feed millers and dealers like to stage feeding demonstrations on their premises and sometimes on a customer's farm, with the feed man paying part or all of the feed cost. The five Martin brothers of Roanoke, Ill., have demonstration projects, too, but they're different than most in that they produce considerable income as well as help promote feed business.

The brothers—Lewis, Robert, John, Wayne and Eugene—operate a $250,000 pellet mill (told about in Feedstuffs last year) on their 300-acre farm. This big mill turns out feed for cattle fed by numerous customers and for the 2,600 head the brothers themselves feed out each year.

The Martins have eight big feed lots on 2,500 acres (owned and rented), and they keep close record of their costs. With this valuable information they are able to give sound feeding advice to customers.

These feed millers and cattlemen raise 350,000 bu. of corn for their operation. Last summer they had 1,400 head of cattle on hand at weights up to 1,400 lb. Lewis Martin, manager, says the brothers try to market their cattle between 1,300 and 1,400 lb.

Ration Described

Steers on rolling land in the woods each get 8 lb. of cattle pellets per day, including 5 lb. corn, 2 lb. supplement and 1 lb. molasses—a 5-to-1 ration.

There is grain, not hay, in the complete ration. No hay is fed to the cattle, as the Martins believe that in this part of the Corn Belt it is cheaper to feed corn.

Their reasoning is this: Farmers have to wait for their corn to dry out and then sell it for 90¢. So why not let the cattle eat it, and get $1.12 bu. for the grain?

"We sell our supplement in a 40-mile area," states Lewis, "and our complete feeds go out a distance of 15 miles. Most feeders around here take a lot of feed every month. We do an excellent feed business cultivating the territory close to home. During the past 12 months we made and sold 15,000 tons of pelleted feed."

The Martins believe, due to their own tests, that a cattle raiser in the Midwest doesn't need house shelter for his herds. "With Terramycin and other antibiotics available, steers can withstand winter weather," they say. "It may require a little more feed, but, on the other hand, the steers will gain more in hot weather by not being in hot barn shelters."

Cost Savings Demonstrated

The visitors to the Martin feeding lots frequently see a number of customers inspecting the steers, their feeding, their housing. The Martins are using many house shelters now, but may discontinue them in favor of open feeding.

Another cost-saving feature in the Martin Bros. operation is the use of two large open pit concrete silos. These are said to be the largest feeding silos of their kind in the world. Each is 60 ft. wide and 300 ft. long, and each holds 6,000 tons of silage. The walls are 24 ft. high and they tilt outward slightly.

The silos are built in 10 ft. wide concrete sections, 8 in. thick. The sections are poured on the site and tipped into place.

Tile was placed behind the walls. There is also a 2-in. crack at the bottom of each section, so that water runs out into the tiles. The concrete of the silo floor is 1 ft. higher in the center than on the sides. This facilitates the off-flow of moisture.

Each silo cost approximately $10,000 to build. The second one was built two years ago. Lewis says that these silos reduce feeding and storage costs. His firm uses a great deal of silage in the feeding program. The open pit silos enable the firm to bring in the silage and load it out again very easily in all types of weather.

"Because we have such a large steer feeding program we have many cattle feeders visiting us all the time," reports Lewis. "They want to know how we do it. We are always glad to show them our methods and costs, for in this way we win new customers."

Feed by Number

Lewis reports that the firm's method of selling special cattle feeds under an analysis number, just as fertilizer is sold, has taken hold with farmers. They can order by number and know exactly what they are getting in complete feeds. These analyses are:

Grain	Supplement	Molasses
20	2	2
14	2	2
12	2	2
8	2	1½

Martin complete cattle feeds have 10 mg. stilbestrol level per steer and 75 mg. Terramycin level per steer. The pellet mill is set up to operate with one man and the management tries to run 100 tons at a time on cattle feed. Adequate storage space is close by.

"We have many feeders who get five tons or more at a time," says Lewis. "Some get 10 to 20 tons. Then we have some very large feeders

FEEDLOTS—Martin Bros. cattle stand in one of the firm's eight feedlots operated on 2,500 acres of land it owns and rents. Accurate, extensive records are of great value in advising feed customers.

OPEN PIT SILO—Bulldozer is used to load trucks with silage from one of two huge open pit concrete silos built by Martin brothers. These pits are said to be the largest of their kind in the world. Each is 60 ft. wide by 300 ft. and each has a capacity of 6,000 tons of silage.

who use 5 to 10 tons of our supplement at a time and grind their own corn on the farm, and also feed silage."

Lewis also notes that his firm often finances feeders when the need arises. Some big feeders may owe the firm $20,000 at certain times during the feeding cycle. The Martins handle this paper themselves.

To facilitate delivery, the Martins have two 7-ton capacity Dodgen auger trucks. The firm also furnishes Butler tanks (7 to 35 tons) to customers using Martin feeds.

Besides the feed mill and the cattle raising project, the Martins have a complete liquid fertilizer blending plant, and also an implement dealership.

Large, Small Types Of Poultry Operators Emerge in Southwest

By Special Correspondent

MIDLAND, TEXAS — Within the last two years there have been emerging two types of poultry operators in the Southwest. These are the small flock owners who keep from 500 to about 1,500 laying hens and the larger operators whose flocks range from 5,000 upwards.

"The 1,500 to 5,000 bird unit is the no-man's land of the poultry industry," says Johnny Williams, who manages the Williams Feed & Supply. "The man with a small flock can tend to the hens in his spare time and get a selected list of customers who will pay premium prices. Seldom does he need to sell to grocery stores and cafes. Once he passes the 1,500-mark, he must sell in competition with large companies which can produce eggs for a lower price."

Within the last year there have been no casualties among these small operators, though several in the middle brackets have gone out of business, it is reported.

Maximum Reached

No one knows how large a poultry flock can be and still show a profit. Not long ago Nolan Robinett, Texas' largest egg producer, made the statement that the larger flocks had reached a maximum. At present Mr. Robinett has 260,000 hens. They are located near four western Texas towns, though the feed is manufactured at a central plant in Lubbock and hauled to the farms in 16,000 lb. bulk trucks. The drivers also bring back all eggs which have not been sold locally and they are taken by a large chain store company.

Mr. Robinett has not enlarged his flocks lately, but has been streamlining production methods. At his Midland farm, where two separate units are located, several new ideas are being tried.

"Getting the most out of equipment and employees is something we are stressing now," said G. D. Kirkland, local manager. "By mechanization and a careful study we have progressed to where one employee is feeding and gathering eggs from 27,000 hens. Also by putting three hens in a 12 in. cage and five in a 24 in. cage, we are keeping up both quantity and quality and utilizing space that had formerly been wasted."

In the feed manufacturing operations, the company buys raw feed materials and mixes this with a supplement made by a major feed company, it was stated.

500,000 Bushel Tank

HALE CENTER, TEXAS—The Six Point Grain Co. announces completion of what is said to be the world's largest bolted steel storage tank at Hale Center. It was recently filled with 500,000 bu. of milo. The tank is 113 ft. in diameter and 48 ft. at eave height. It was fabricated by National Tank Co., Tulsa, Okla.

Pounds of Turkeys In Storage Reported

CHICAGO—A total of 118,626,216 lb. of turkeys was reported in storage on Jan. 31, 1961, according to announcement by the Institute of American Poultry Industries. This includes warehouse-stored turkeys only.

Of the total tonnage reported, 115,092,289 lb. were classified. Eviscerated tom turkeys totaled 78.9%, down from 83.32% in 1960. Eviscerated hen turkeys comprised 16.53% of the total classified stocks this year compared with 12.01% a year ago, it was reported.

Eviscerated broiler-fryer type turkeys were 4.2%, up from 3.12% the previous year. New York dressed tom turkeys totaled 0.28% (1.48% in 1960) and New York dressed hen turkeys, 0.05% compared with 0.07% in 1960.

BIG CHIEF
Pit Augers • Elevator Legs • Mixers • Scalpers •
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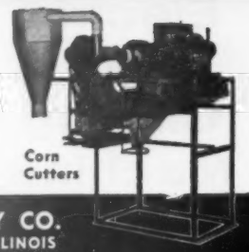
Hammer Mills 50 to 150 H.P.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Whitmoyer KEMITRACIN ANTIBIOTIC rate on
✓ growth promotion
✓ feed efficiency

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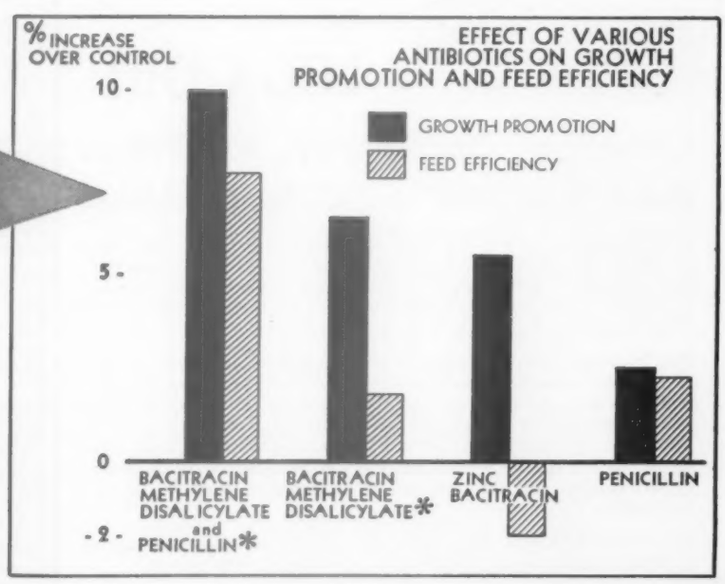

* The antibiotic content of KEMITRACIN is bacitracin methylene disalicylate. Whitmoyer KEM-PEN-10 is a combination of KEMITRACIN and penicillin.

Get the Detailed W. A. R. F. report
Write Dept. FS-3

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Manufacturing Chemists
MYERSTOWN, PENNA., U. S. A.

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WAREHOUSE STOCKS AVAILABLE AT THESE AND OTHER CONVENIENT U.S. AND FOREIGN LOCATIONS:
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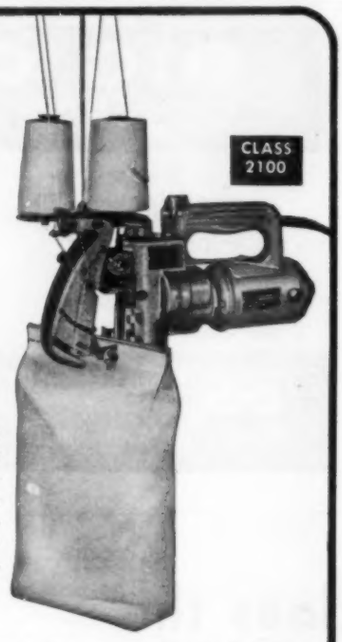
Lubbock, Texas Des Moines, Iowa Minneapolis, Minn. Ogden, Utah Buena Park, Calif.
In Canada: Whitmoyer Laboratories, Ltd., Port Credit (Toronto Twp.), Ontario

NEW! Portable Electric Bag Closing Machine



HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

- **LIGHTWEIGHT**—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.
- **POWERFUL**—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.
- **VERSATILE**—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.
- **SAFE**—Anyone can operate it. No special training required. Can be obtained with overhead suspension. Also, can be supplied with pedestal bracket. Send for descriptive literature.

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OUTLOOK or LOOK OUT!

Challenges, Opportunities and Pitfalls Await Feed Men in the Months Ahead

An informed outlook is the best insurance against the "look out!" warnings that usually come too late. That is one of the reasons for the popularity of Feedstuffs' Outlook Issue. That's the reason it has been necessary to reprint the Outlook features in the Dec. 31, 1960, issue.

This 20-page reprint includes 11 articles on business prospects and important trends in various areas of the feed industry, with emphasis on marketing at a profit. Included in the report are exclusive articles by Robert D. Emmons of Wirthmore Feeds, Inc.; Earl P. Mitchell of Alabama Flour Mills; E. C. Fuller of Nutrena Mills, Inc.; G. A. Ensminger of Albers Milling Co., and R. H. Bauman and J. O. Dunbar of the agricultural economics staff at Purdue University.

You'll also find that valuable information from Feedstuffs' survey of feed manufacturers is presented in detail in the report.

If you'd like to sharpen your outlook and eliminate the "look outs," just fill in and mail the coupon.

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SELLIN' SAM — **By Jim Zilverberg**

"Oh, don't mind him—it's his job to gather the eggs!"

REVIEW

(Continued from page 28)

each. The combs and wattles were removed from one group and left intact in the others. Rectal temperatures of these birds were obtained twice weekly for 52 weeks.

Dubbing had no effect on egg weight, Haugh units, blood and meat spots, body weight and livability. While there was no difference between dubbed and undubbed birds for egg production or feed conversion to 518 days, the dubbed birds laid at a higher rate during the colder months and a lower rate during the warmer months. This difference in egg production was also reflected in feed conversion.

Differences in rectal temperatures between dubbed and non-dubbed chickens were not significant. Dubbed birds, however, had a lower body temperature during the cooler months and a higher one during the warmer months. Behavior patterns also differed between dubbed and undubbed chickens during these periods.

The results indicate that for layers maintained on the floor dubbing should be recommended when temperatures for the greater part of the laying year are under 65° F.

GROWING BROILERS TO A HEAVIER WEIGHT—The question of growing broilers to a heavier weight beyond the customary 3.0-3.5 lb. has often been discussed. A report was given on this subject from the Virginia Polytechnic Institute (E. L. Wisman, W. L. Beane, W. R. Luckham and E. O. Essary). A study was made with experimental chicks grown in the summer of 1960 to determine if broiler-type chicks could be grown more economically beyond the customary 3-3.5 lb. of body weight (9 weeks).

Duplicate pens of 137-205 day-old Vantress x Pilch chicks were grown to 13 weeks of age and fed the same commercial mash ration. The sexes were reared both separately and combined at .8 and 1.0 sq. ft. of floor space per chick, and separately only at 1.2 sq. ft. Pen weights of all chicks were obtained weekly except at 6, 9 and 13 weeks of age when the chicks were individually weighed. Mortality and weekly feed consumption by pens were also recorded. Six chicks were removed from each pen at 9, 11 and 13 weeks of age to obtain certain processing data.

Results of the study were as follows:

(1) Males reared separately, but not females, grew faster with increased floor space (.8, 1.0 and 1.2 sq. ft./chick) to at least 11 weeks of age. At 13 weeks both sexes were heavier at each increase in floor space.

(2) When intermingled, males grew faster at .8 and 1.0 sq. ft.; females grew slower at .8 but not at 1.0 sq. ft.

(3) When the means of both sexes were considered, intermingling resulted in slightly better growth at 1.0 but not at .8 sq. ft.

(4) Approximately 3% loss in body weight occurred at 9, 11 and 13 weeks of age due to shipping.

(5) Warm eviscerated yield, based on body weight just prior to slaughter, approximated 74% and was not different by treatment, except for a slight increase with age.

(6) Carcass grades determined at 13 weeks by floor space groups indicated a decided upgrading in quality with increased floor space.

(7) A marked increase in breast blisters, which occurred only in males was observed after 9 weeks of age.

(8) The condemnation rate on all birds at 13 weeks was 2.7%, half of which was attributed to air-sac disease. About half of these losses were estimated to have been incurred after 9 weeks of age.

(9) Lowest cost of production per pound per lot and highest labor income per sq. ft. per year were evident for males reared at .8 sq. ft. to 11 weeks of age. Condemnation losses, but not premiums on carcass quality, were considered in the calculations.

(10) Sexes reared intermingled were more profitable than when they were reared separately.

CANADIAN FARM INCOME

OTTAWA — Preliminary estimates of the Dominion Bureau of Statistics indicate Canadian farmers during 1960 received approximately $2,783.8 million from the sale of farm products. This figure is almost unchanged from that of 1959 and compares with the record high of $2,859.1 million realized in 1952, it was reported. On a commodity basis, the more important reductions in farm cash income during 1960 compared to 1959, were recorded for hogs and barley. The more important gains were realized from the sale of cattle, calves, wheat, potatoes, dairy products, fruits and tobacco.

Despite the almost annual introduction of new coccidiostats...

nfz® and *bifuran* still come closest to what you and your customers look for in a coccidiostat for replacement birds!

During the last few years — amid a lot of fanfare and promises — several new coccidiostats have been introduced to the feed industry.

While some have started off well, they have failed to live up to their advance billing. Not one has solved the coccidiosis problem.

Unfortunately, there is *still* no such thing as a perfect coccidiostat. We don't have one . . . and neither does anyone else.

But here's a point worth noting: While many heralded coccidiostats have come and faded away, *nfz* and *bifuran* have continued in demand for replacement birds. In fact, use of these two products in replacement feeds is growing.

No registration headaches — One reason behind the increasing demand for *nfz* and *bifuran* is the fact that you can use either of these coccidiostats *without registration problems.* They are not new drugs and are cleared for use in combination with almost all commonly used additives.

But a more basic reason is found in a recent survey in which feed manufacturers were asked, "What do you look for primarily in evaluating a coccidiostat for replacement birds?" The survey shows *nfz and bifuran come closest to providing the benefits wanted.*

Considered by far the most important feature of a coccidiostat for replacement birds is the building of "lifetime immunity" . . . followed by the "safety" of the drug. *nfz* and *bifuran* deliver both of these major benefits . . . plus many additional features that distinguish them from other coccidiostats. Following is the complete *nfz* and *bifuran* protective package:

Lifetime immunity to coccidiosis by housing time... that's a "must" for replacement birds. Both *nfz* and *bifuran* allow lasting immunity development, the natural way—by permitting a mild, controlled infection during the growing period.

Safe, nontoxic — Neither *nfz* nor *bifuran* has harmful effects on internal egg quality, shell texture, hatchability or fertility. Unlike most other commonly used coccidiostats, *nfz* and *bifuran* can be safely fed to laying hens. Also, these two medications are nontoxic to livestock and pets.

Control outbreaks — You can raise the *nfz* or *bifuran* intake to the coccidiosis treatment level...safely... without bringing in another drug. This is not possible with some coccidiostats.

Antibacterial — In addition to aiding in the lifetime immunity process, *nfz* and *bifuran* knock out many secondary infections that can sap vitality, cause nonproductive runts and culls. They give you more than just coccidiosis protection.

Effective against pullorum — By increasing the *nfz* or *bifuran* level to 3 lbs. per ton of feed for 10 to 14 days, you can prevent mortality from pullorum. There's no need to come in with other drugs.

In the light of current registration headaches and confusion about coccidiostats, we wanted to remind you that perhaps *nfz* and *bifuran* can help solve problems for you. They are still doing the same effective job of controlling coccidiosis and allowing immunity they've always done.

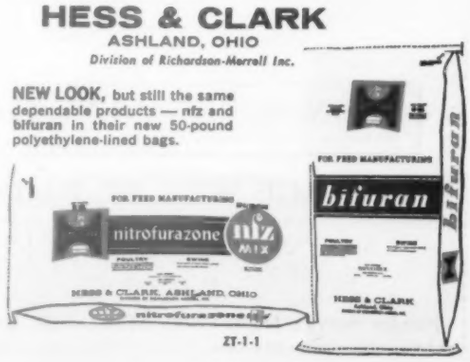
For an *nfz-bifuran* reviewing session, get in touch with your Hess & Clark representative.

Effective against necro in pigs

While you have nfz or bifuran in your mill, here's another use for the same medication. nfz (at a level of 10 lbs. per ton of feed) and bifuran (at an 8-lb level) are effective, low-cost treatments for infectious necrotic enteritis in pigs. Self-fed to the entire herd for 5 to 7 days, these drugs prevent disease damage and allow the pigs to overcome the disease drag of necro.

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

NEW LOOK, but still the same dependable products — nfz and bifuran in their new 50-pound polyethylene-lined bags.



ZT-1-1

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7334—Vitamin A Product

A new dry product for all areas of supplementary vitamin A feeding of livestock and poultry has been announced by Nopco Chemical Co.

The new product—Capstress—is said to be a "major advance" in the high-level use of supplementary vitamin A to combat stress and depletion conditions caused by sickness and extremes of temperature.

Company officials claim that Capstress is "superior to present types of vitamin A." It's reported to be completely dispersible, even in cold drinking water, and is stable in feeds when used as a dry product.

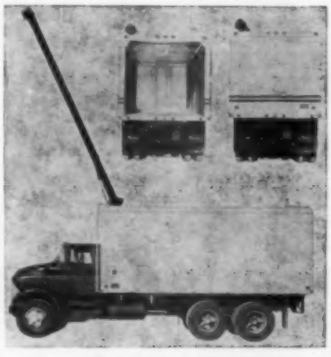
For additional information, check No. 7334 on the coupon and mail.

No. 7336—Bulk and Bag Transport Body

An over-the-road transport body suitable for bulk, bag and van delivery has been announced by Dodgen Industries.

Company officials say the multi-purpose body is equipped with a 30-ft. auger, "weathertight" hatches and doors and ball-bearing mounted traps. The wide-swinging doors allow access to the rear of the body.

The manufacturer says that with a payloader capacity of 12-13 tons, the body can be easily separated into three compartments for transportation of diversified loads.



"Design of the Dodgen front-end auger eliminates twisted bodies, bent hoist rams and sagging corners," the company says. "It also assures maximum balanced payload and eliminates obstructions for bag delivery. An exclusive removable swivel spout does away with plugging when unloading into self-feeders."

For additional information, check No. 7336 on the coupon and mail.

No. 7337—Beef Cattle Feeding Program

A new "Beef-Maker" program "designed to help cattle producers utilize the extra-gain benefits of both stilbestrol and Terramycin" has been announced by Chas. Pfizer & Co., Inc.

The "Beef-Maker" program is a five-point feeding cycle system for the beef animal. Pfizer spokesmen say it is geared to give producers maximum advantage of a growth-promoting hormone coupled with an antibiotic providing additional weight gains, plus important feed savings and disease protection.

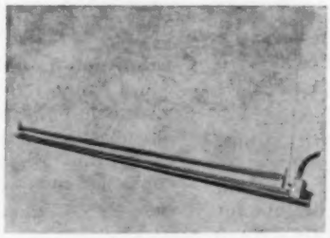
Under the "Beef-Maker" program, Pfizer is recommending five feeding and handling practices: (1) Implant "Stimplants" in feedlot steers as they come off trucks or cars; Pfizer says this provides gains "at less cost than with orally fed stilbestrol." (2) Provide feeds fortified with high levels of Terramycin for protection against shipping fever; such animal health feeds are available as Terramycin A/D Crumbles, for top dressing on the regular ration, or as stress feeds and other custom-mix preparations. (3) Switch to low levels of Terramycin for improvement of gain and feed savings for the entire feeding period. (4) Use Pfizer vitamin A palmitate in gelatin the feedlot ration to correct vitamin A deficiencies in cattle arriving in the feedlot and to make up for any shortages in homegrown feedstuffs. (5) At first signs of trouble from scours and shipping fever, use feeds containing high levels of Terramycin.

For additional information, check No. 7337 on the coupon and mail.

No. 7340—Hanging Waterer

The Fulton Co. announces development of a new 8 ft., hanging, galvanized waterer with a "V" type trough. It has a depth of 2½ in. and a top width of 2¾ in.

The firm says the new trough is



shipped complete with cadmium plated chains, "S" hooks, Fox type valve, "Z" reel and a 2 ft. braided hose and clamps.

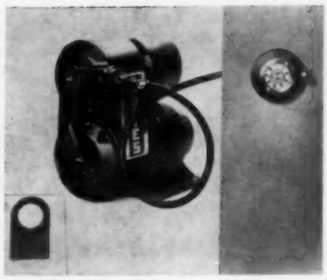
For additional information, check No. 7340 on the coupon and mail.

No. 7335—Remote Control Speed Changer

The Reeves Pulley division of Reliance Electric & Engineering Co. has announced development of a new mechanical remote control for changing output speeds on Reeves Variable Speed Motodrives.

The remote unit (note photo) consists of a flexible shaft and an indicator handwheel. The handwheel is turned to change speeds. A dial on the face of the handwheel indicates the speed setting. The handwheel is designed for panel or wall mounting, and a mounting bracket is available for machine or free-standing mounting.

The flexible shaft, which connects the handwheel to the Motodrive, uses anti-backlash construction which reportedly permits all handwheel



movements to be transmitted without absorption by the shaft. The standard shaft is 5 ft. long, but other lengths can be specified.

The anti-backlash flexible shaft makes it possible to change speeds of Reeves Motodrives mounted in inaccessible places.

The new flexible shaft control is available for use on Motodrives rated ¼ through 2 h.p. The remote control can be specified on new units, and kits are available, according to the firm, for converting Motodrives now in use.

For additional information, check No. 7335 on the coupon and mail.

No. 7342—Automated Feeding System

Completely automated feeding systems that incorporate the Baughman-Sievers Model 400 automatic grain soaker, feeder and waterer have been announced by Baughman Mfg. Co.

Used by hog and cattle feeders, this feeding method is said to keep a soaked grain and water supply before livestock indefinitely without human attention. The manufacturer reports

that labor requirements per animal have been reduced and animals reach market weight faster at lower cost per pound of gain.

The firm says that its automated feeding system incorporates a screw-type conveyor which delivers whole shell corn or other grain from storage to feeder hopper. A single Baughman Model 400 unit can be connected to the granary in this arrangement, or a number of the feeders can be arranged in tandem. The system is described as capable of taking care of 125 to 150 hogs, or 60 to 75 head of cattle. Everything is under push-button control.

The Baughman-Sievers Model 400 automatic grain soaker, feeder and waterer soaks whole grain to make it more palatable and easier to digest and to improve feed conversion efficiency. In addition to serving as a grain soaker and automatic feeder, it also functions as a watering trough.

Installation of heating units keeps water and grain warm during winter weather which encourages consumption.

For additional information, check No. 7342 on the coupon and mail.

No. 7338—Poultry Stress Product for Water

Development of a new product, water dispersible Streseez for poultry, has been announced by Dawe's Laboratories.

Dispersible in drinking water, Streseez contains a broad spectrum combination of bacitracin and penicillin, plus vitamins A, D_3, E, riboflavin, pantothenic acid, niacin and B_{12}.

Streseez is said to provide these antibiotics and vitamins at levels de-

Send me information on the items marked:

- ☐ No. 7334—Vitamin A Product
- ☐ No. 7335—Speed Changer
- ☐ No. 7336—Transport Body
- ☐ No. 7337—Feeding Program
- ☐ No. 7338—Poultry Stress Product
- ☐ No. 7339—Level Control Probe
- ☐ No. 7340—Hanging Waterer
- ☐ No. 7341—Pellet Mill Roll
- ☐ No. 7342—Feeding System
- ☐ No. 7343—Distillers Bulletin

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signed to be effective in combating many of the stresses that cause loss of production and profits.

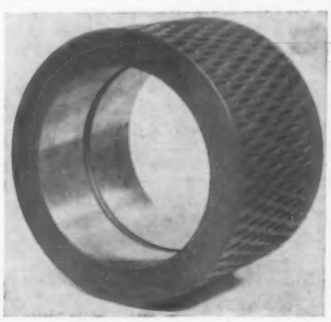
Dawe's reports that these stresses include starting, debeaking, vaccination, worming, moving, adverse weather conditions, laying slumps and certain specific diseases.

For additional information including a folder that describes the uses and usage levels of water dispersible Streseez for poultry, check No. 7338 on the coupon and mail.

No. 7341—Pellet Mill Roll Corrugation

The Alloy Hardfacing & Engineering Co. announces development of a new type of corrugation (note photo) for pellet mill rolls that is said to assure longer roll and die life.

The manufacturer claims that a crescent design, featuring greater depth of corrugation, delivers greater gripping power than conventional V-



type corrugation and provides "absolute self-cleaning action."

It is claimed that this design traps feed to stop washout in rolls and dies and assures full utilization of all die holes. A company report says that the corrugation pattern also means less bearing and seal costs because of longer roll life. The roll is available in competitive or premium alloy steels.

For additional information, check No. 7341 on the coupon and mail.

No. 7339—Level Control Probe

A self-contained capacitance probe-type material level control for direct mounting on bins, hoppers, tanks or other containers holding dry, semi-dry or liquid materials has been developed by the electronic controls division of Flo-Tronics, Inc.

The manufacturer says the Flo-Level Model L201 level control is provided in both high level and low level units. Probe is integral with an "explosion-proof" control casing. The entire instrument is mounted as one unit at the point of control desired.

Because of its reported high sensitivity range, the Flo-Level L201 is claimed to be ideal for use with such light weight, low capacitance materials as plastic powders or pellets. It also reportedly has a wide range of level control applications for powdered or granular materials, semi-liquids and liquids.

Company officials say that presence or absence of material is detected by the probe through changes occurring in the electrostatic field. A signal is given to the control circuit which activates a two-way fail-safe snap action relay to effect operation of the filling or shut-off device.

It is said that a threaded hub on the control permits mounting at any point desired by screwing the entire probe and control assembly into a

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BROKER JOBBER
• FEEDSTUFFS •
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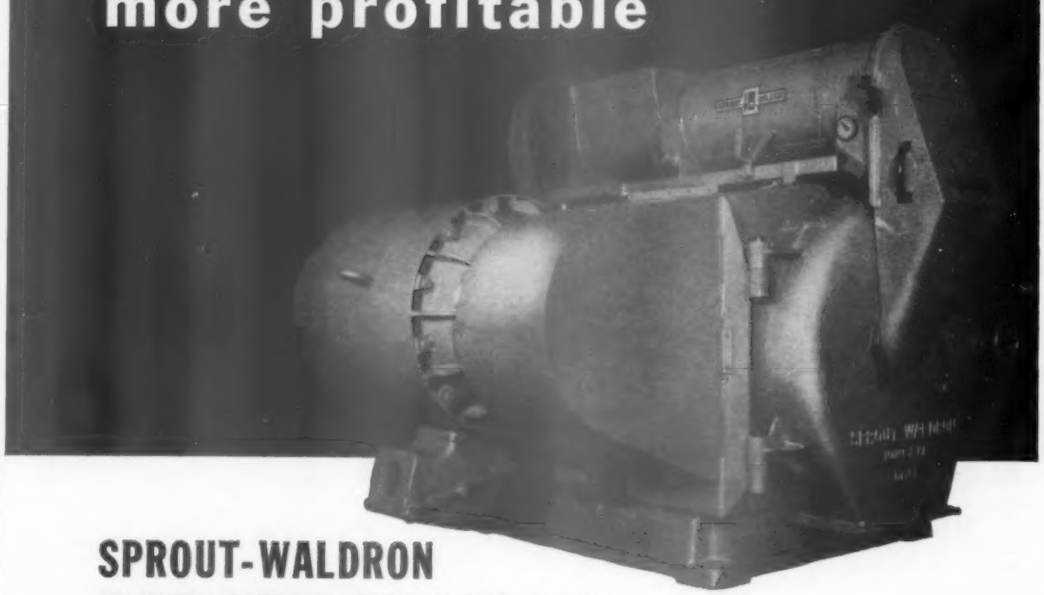

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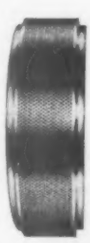

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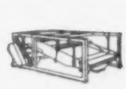
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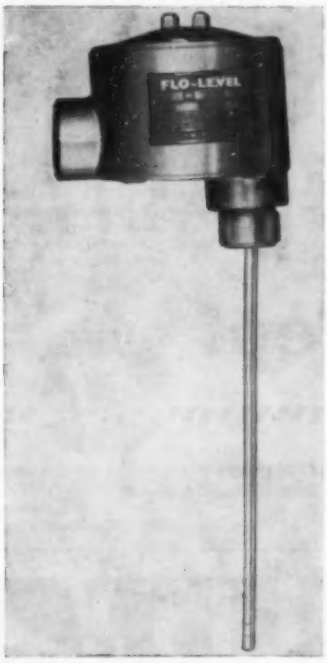

standard pipe coupling attached to the wall of the container.

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No. 7343—Distillers Feeds Bulletin

How distillers feeds are made, what their nutrient composition is and how they can be used in formulating feeds for livestock and poultry are described in a new bulletin released recently by the Distillers Feed Research Council.

Entitled "Feed Formulation with Distillers Feeds," this bulletin is designed to aid feed manufacturers in the use of distillers dried grains, distillers dried grains with solubles and distillers dried solubles to produce better formula feeds.

The bulletin includes tabular information on the nutrient composition of distillers feeds, including data on vitamins, minerals and amino acids as well as moisture, protein, fat, fiber, ash and energy. An ingredient analysis table for other ingredients as well as distillers feeds also is presented.

The bulletin reviews briefly research work done with distillers feeds for various types of poultry and livestock and small animals and fish, and it goes on to discuss feed formulation.

Formulas developed and recommended or suggested by leading nutritionists are presented. These include formulas for all types of poultry, game birds, swine, dairy animals, beef cattle, fish feeds, dog food, rabbit feeds and feeds for fur bearing animals.

For a copy of the bulletin, check No. 7343 on the coupon and mail.

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The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

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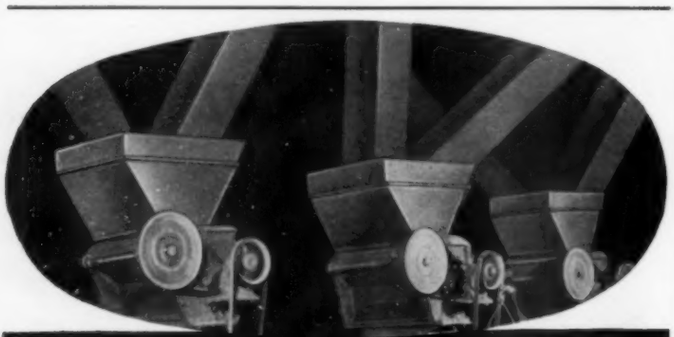
EL CENTRO, CAL.—Articles of incorporation to operate a livestock feeding business have been filed by the Mulberry Cattle Co., Inc., El Centro, to operate a livestock feeding operation. The firm listed $200,000 in $100 par stock. Directors are Paul Elijah, Gerald Elijah and Donald Elijah, all of Brawley, Cal.



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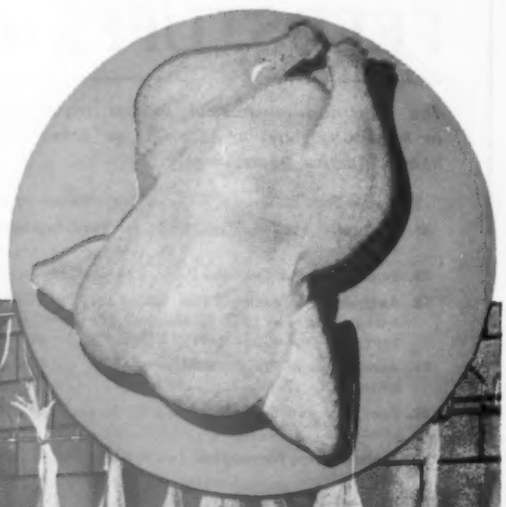

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Detection of Crotalaria Seed in Mixed Feeds

By E. E. Brown and J. F. Fudge*
Texas Agricultural Experiment Station

EDITOR'S NOTE: The detection and identification of crotalaria seed have become of increased importance to grain and feed men, particularly in the South. Feed men and others will be interested in this article—from a research report by the Texas Agricultural Experiment Station, College Station—on a method for detection and identification of crotalaria.

Several cases of poisoning by mixed feeds have occurred recently in which investigation has shown that the toxin came from seed of crotalaria species present in the feed. The detection and identification of such seed in mixed feeds have, therefore, become of considerable importance. This publication presents a method for such detection and identification.

While the genus crotalaria contains many species, only two, C. spectabilis and C. retusa, have been investigated extensively. These species have been used widely in the South for many years for soil conservation and improvement. Some work also has been done with C. juncea, C. striata and C. intermedia.

Seed of crotalaria species may remain dormant in the soil for several years and then germinate and mature as volunteer plants in plantings of corn, soybeans, oats, grain sorghum or other grains which subsequently are harvested and used in the formulation of mixed feeds. Seed of crotalaria thus occur as a contaminant in the feed grains. Both the plant and the seed are toxic, but the seed are much more poisonous than the vegetative parts of the plant. The toxins in crotalaria seed are so powerful that only a few seed per pound of mixed feed can cause trouble ranging from loss of thrifty conditions through severe liver damage to death of the animal.

TOXINS—The toxicity of crotalaria seed is due to the presence of a number of alkaloids and closely related compounds. All crotalaria species investigated thus far are toxic, but the degree of toxicity varies with different species. Culvenor and Smith (7, 8) isolated monocrotaline and a new alkaloid, spectabiline, from seed of C. spectabilis. Spectabiline, an O-acetylmonocrotaline, also was prepared by acetylation of monocrotaline, and has the empirical formula $C_{18}H_{29}O_7N$. Preliminary assays (8) showed an alkaloid content of 5.8% in the seed and 0.63% in the whole plant. In C. retusa, they found retronecine-N-oxide and three new alkaloids—retusine, retusamine and a noncharacterized base. Adams and co-workers (1, 2, 3, 4, 5) were the first to determine that C. retusa is a poisonous plant. They reported that its total alkaloid content ranged as high as 5%, of which a large part was monocrotaline. They also proved that this alkaloid had a cyclic diester structure.

MACROSCOPIC CHARACTERISTICS—Crotalaria seed in a mixed feed may occur either as whole seed or as fragments produced by grinding the grain in which the crotalaria seed are present. The identification of whole seed is rather simple, but fragments must be examined microscopically before they can be identified positively.

Whole seed of crotalaria are circu-

*Respectively, research microscopist and state chemist.

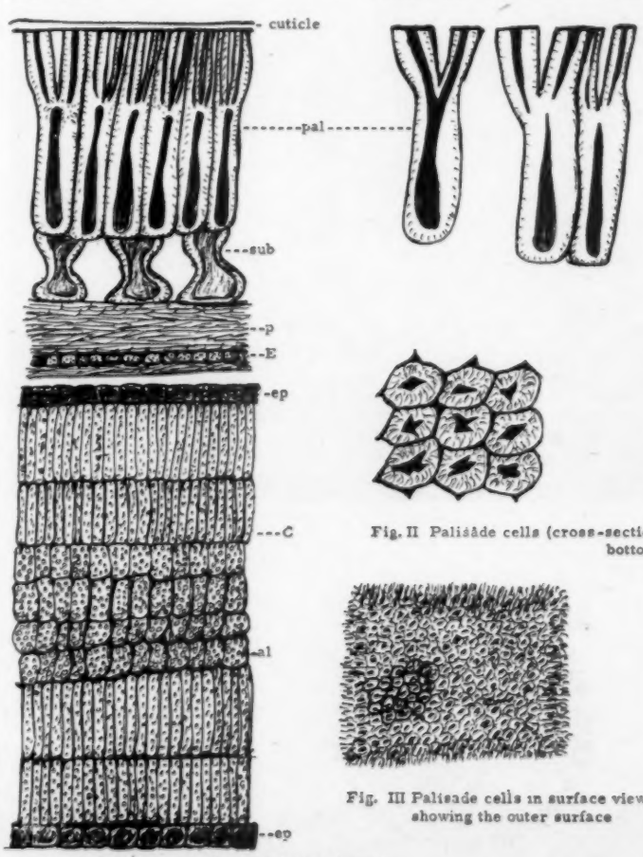

Fig. I Crotalaria juncea (cross-section of seed)
pal - palisade cells, sub-column cells (subepidermal layer), p-parenchyma, E-endosperm, C-cotyledon, with ep-epidermis and al-aleurone grains

Fig. II Palisade cells (cross-section-bottom)

Fig. III Palisade cells in surface view showing the outer surface

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lar kidney-shaped, somewhat flattened, and have a deep notch on the ventral side near the smaller end. The length, diameter, color and degree of flattening and rounding of the notch at the hilum and of the hilum itself vary with different species and are the primary macroscopic characteristics by which the different specias may be identified. Seed of C. juncea are 7-8 mm. in length, 4-5 mm. in diameter, the seed coat has a smooth, black shining surface and the notch is deep with the anterior end curved and protruding over the hilum. Seed of C. spectabilis are 4.5-5 mm. long, 3.5-4 mm. in diameter, the seed coat has a smooth, greenish-brown to black shining surface, the notch is deep and rounded and the hilum is exposed and prominent. Seed of C. striata are 3-3.5 mm. long, 2-2.5 mm. in diameter, the seed coat is smooth and yellow-brown with mottling of greenish-brown and black, the notch is deep and rounded and the hilum is recessed. Seed of C. intermedia are 2.5-3 mm. long, 1.5-2 mm. in diameter, the seed coat has a smooth, straw-yellow surface, the notch is deep and rounded, and the hilum is prominent.

MICROSCOPIC CHARACTERISTICS—Fragments of crotalaria seed in a ground mixed feed must be examined microscopically before detection can be confirmed. Some of the microscopic characteristics which serve as identification are shown in Figures I, II and III. Marked characteristics are the Y-shaped palisade cells of the spermoderm covered with a thick cuticle, the presence of an endosperm and the absence of starch in the cotyledons. The spermoderm is united closely with the layers of the endosperm. The palisade cells are 15-20 microns high and 4-5 microns broad. The outer portion of each cell for about one third of its length is Y-shaped and a narrow cavity extends centrally down each side and unites with a larger cavity which reaches nearly to the bottom of the cell. A dark-colored substance is contained in the inner portions of the cavity. The outer flat or blunt-pointed ends of the palisade cells are covered over with a smooth cuticle 3-4 microns thick. The column cells are 5-6 microns long and 6-8 microns broad and have somewhat thickened walls. The spongy parenchyma is much compressed and presents no characteristic features. The endosperm consists of a single layer of moderately thick-walled aleurone cells. The aleurone cells, as seen in surface view, are rectangular or polygonal, 6-8 microns broad and contain proteid substances. Hard cotyledons and radicle of the embryo contain aleurone grains, but do not contain starch. Two layers of palisade cells, 12-15 microns in length and 3-4 microns wide, underlie the inner epidermis. The cells toward the center become rectangular or polygonal and are arranged end to end and side by side, since they are in the palisade layers.

DETECTION BY CHEMICALS—Microscopic examination of every questionable sample of feed obviously is impractical. A rapid chemical method for the detection of crotalaria seed, therefore, was developed for screening purposes. The method is as follows:

A small portion (about 10 mg.) of finely ground feed is placed on a microscope slide. Three drops of mounting medium (equal parts of chloral hydrate, water and glycerol) and two drops of hydrochloric acid (1 part acid plus 6 parts water) are added. The feed and reagents are mixed thoroughly and spread evenly over about half of the slide and allowed to stand three to four minutes. Fragments of crotalaria seed, if present, will change from black or straw-yellow to a pink to cherry-red color. If the red color develops, an excess of sodium hydroxide (3 or 4 pellets in 30 cc water) is added to the mixture, which causes the fragments of crotalaria seed to turn blue. The change in color of crotalaria fragments probably results from the presence of some anthocyanin within the cavities of the palisade cells.

Seed of several other plants, the bran coats of barley and rye and the seed coats of many kinds of weed seed contain anthocyanins which give their fragments a red, blue or black color under normal conditions, but the addition of acid or base causes no change in color. This color change from black or straw-yellow to red or blue with a change in acidity has not been found with fragments of any other material and appears to be specific for crotalaria seed. Consequently, fragments of these other materials will not be confused with fragments of crotalaria seed.

This detection method is of particular value in examining soybean meals suspected of containing ground crotalaria seed. The outer surfaces of the soya and crotalaria hulls are very similar in appearance when viewed under a compound microscope. In such cases, the two hulls may be differentiated quickly by adding one to two drops of the acid solution to the slide. The crotalaria hull fragment will turn slowly through pink to a cherry-red color; the color of the soya hull will remain unchanged.

The detection method is effective on seed of C. spectabilis, C. juncea, C. striata and C. intermedia, but is less distinctive on C. intermedia because it has a normal reddish straw-yellow color. Development of the blue color with sodium hydroxide is best in the case of this species.

The mounting medium has been checked to determine if any of the reagents used is essential to the development of the red color in crotalaria hull. Glycerol had no effect, but development of the red color in acid solution is hastened by the chloral hydrate.

This method also can be used for detecting the presence of sunflower meal. The anthocyanins in this plant are concentrated in the disk flowers of the modified calyx or pappus, seed coat (pericarp) and the epidermal tissues of the stalks and stems. All of these tissues turn to a blood-red color when a drop of the acid solution is added to them in the mounting medium. The color reaction depends on the use of both the acid and chloral hydrate. Glycerol appears to speed the reaction and causes the red color to spread out into the mounting medium. Sodium hydroxide alone or with the mounting medium does not produce a color change in any of the tissues of the mature plant. If any flowering heads are incorporated in the product, the yellow petals from the ray flowers will turn blue when a drop of sodium hydroxide is added to it in the mounting medium. The acid solution does not change the normal yellow color of the petal.

v v

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ADDITIONAL DATA FROM CO-AUTHOR

Since original publication of this article at Texas, E. E. Brown, co-author, has learned that the hilum plate from some types of black-colored soybeans will also react to the color test (see article).

Also, he says, "Florida tick-clover (Desmodium tortuosum) reacts very similar to crotalaria.

"There are probably many other seeds that will give the color change; thus, as is explained in the article, a microscopic examination of these tissues that turn red color in acid mount have to be made for a positive identification. The use of the acid is helpful in checking a sample of ground mixed feed. If none of the particles turn red color, then it can be assumed immediately that crotalaria seeds are absent from the mixture.

"I have checked several species of crotalaria and find that all of them (seed coat fragments only) react very nicely to produce color when either acid or base is added to the mountant."

$300,000 Stockyard

GREELEY, COLO.—Roy Johnson, Lucerne, president of the Northern Colorado Stockyards Properties Co., has announced plans for a $300,000 terminal stockyard one mile north of Greeley.

The new facility, to be located on 44 acres of land adjacent to the Union Pacific railroad and U.S. Highway 85, will have a capacity of 6,000 head of beef in its sales pens. Both public auction and private treaty sales of fat beef, fat lambs and feeder cattle are anticipated.

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In the course of 23 years, the Amburgo program has helped to produce many significant advances in the field of feed additives. It is also the reason for our industry-wide reputation — "if it's NEW-tritious, it's from AMBURGO . . . naturally."

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MIDWEST

(Continued from page 10)

ing were on farms of less than 69 acres.

● The commercial farms that sell $2,500 or more gross farm products per year stayed almost stable at 2.1 million farms during those five years. And the "family farms," such as the those of 100 to 259 acres, moved up from 29.6% of the total to 32%.

● The decline in farm numbers is leaving a healthier, stronger agriculture—the changes are in the direction of making higher per-farm income—which is the real goal of all farmers.

● There is a shift to greater specialization. While there has been a rapid decline in the number of farms having milk cows and chickens, this has been because many farmers who had a cow or two for milk and a few hens for eggs have found that chore time spent on major farm work returns more money. Dairy farms and chicken farms are carrying more numbers. This is good business for feed manufacturers.

While the number of farms buying feed in Iowa, for example, has decreased, the average Iowa farm bought $2,607 worth of feed in 1959 compared with $1,855 worth in 1954. The total amount of money spent for feed in Iowa increased 27% in those five years.

Mr. Gifford noted that while farms are getting larger, the growth in numbers of farms with more than 1,000 acres was slower in the last five years than in the previous five years. He said that when farmers have large operations, they are more tempted to mix their own feed, but he also called attention to the fact that there is an ever-increasing competition for the use of the dollar on the farm.

"Every farmer must consider where the dollar will return him the most money—in fertilizer, production machinery, labor, environmental control, mechanical feed handling, more livestock numbers or in mixing feed. This is what the local feed dealer is competing with. He needs to argue his case on the economy of dealer feed handling, service and superior performance of the feed," Mr. Gifford said.

Inward Pressures

The Farm Journal editor said there are a number of inward pressures which will prevent the development of a few mammoth farms raising all the produce needed with the little guy squeezed out.

Principles that exert an inward pressure on land, Mr. Gifford said, were: (1) Encirclement of land. Each expanding farm unit wants to enlarge in place and eventually finds itself encircled by other farms trying to expand. (2) Leapfrogging cost of working land. A farming unit of land —one that will handle, economically, one full set of mechanization—needs to leap-frog into nearly twice the size to handle two full sets of mechanization or there is no economic advantage.

Inward pressures on livestock cited by Mr. Gifford were these: (1) Livestock are tied to land size. Most livestock operations are complementary with land use. (2) Livestock are complementary with farm work. The livestock raising season which requires the most work uses the excess labor from the crop season. This reduces the unit cost of labor when the family labor is distributed over the season, thus making the family livestock operations highly competitive compared with the "factory-type" livestock operation. (3) Most livestock resist concentration. Stress and disease problems, as well as psychological problems, increase with concentration.

As inward pressures on management, Mr. Gifford listed: (1) Labor problems are bigger than machinery problems. Farm labor is high-priced, it is undependable, it is often unskilled. Farmers eliminate all the labor problems they can with machinery, but once they get beyond the full use of their own time with machinery, they run into labor problems—which they resist. (2) Management can't be put on an assembly-line basis. Farming is a series of countless daily and varying "judgment" decisions that call for skill, thought and management ability. An unskilled, changing labor supply can't anticipate, fathom, or exercise judgment over the extreme range of rapidly changing decisions that characterize the normal farming operation.

WHAT FARMERS ARE WORRIED ABOUT—Kirk Fox, editor emeritus of Successful Farming Magazine, Des Moines, discussed the subject, "What Our Readers Are Worried About." Some of the major questions asked are these, he said:

Should we improve our pastures in order to reduce the amount of concentrate? Or should we forget about pastures for high producing and finishing animals? For the majority, he predicted dry lot feeding of dairy, beef cattle and hogs in the next 10 years.

Am I feeding according to the genetic limits of my animals? is an-

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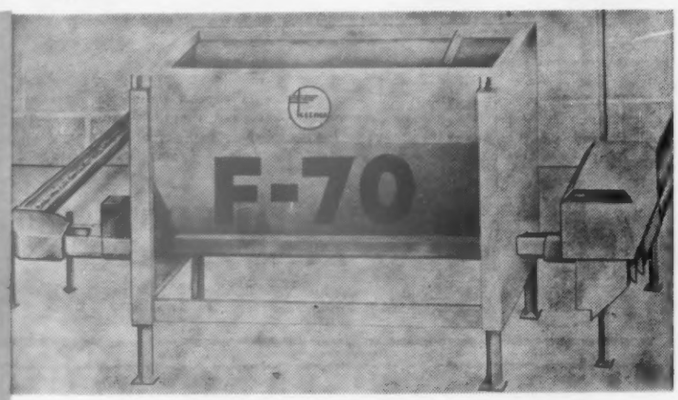

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This heavy-duty machine features heavy-gauge steel scraper blades shown above. Blades are pulled through droppings pits by a specially coated steel cable. Field reports show that these extra rugged Keenco Pit Cleaners "hold up" where others fail.

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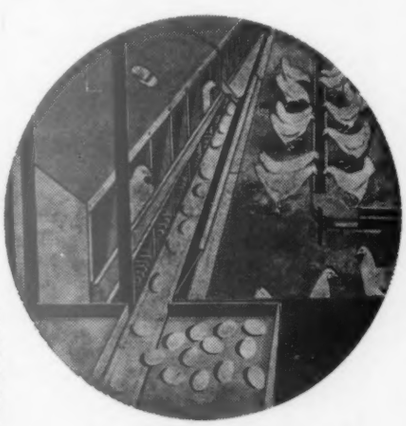

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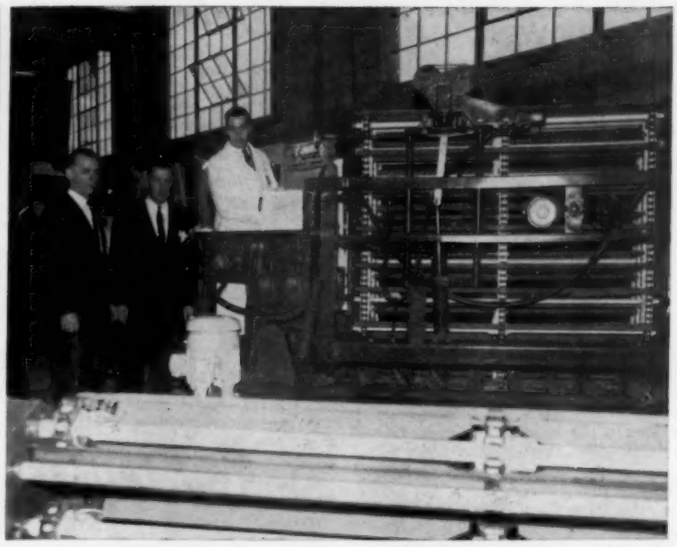

NEW PRODUCT LINE—The Daffin Corp. of Hopkins, Minn. introduced its new product lines for 1961 to 175 business, financial, and agricultural leaders at an open house held recently in the firm's engineering and research building. The firm's four divisions: Farmhand, Superior, Fluidizer and Daffin Manufacturing produce and market 80 different products for agriculture and agri-industry. Photo shows Superior division's "Grain Car Unloader"—reported capable of unloading five cars of grain per hour—being checked out by (from left): Henry Pyzdrowski, general manager, Superior division; C. F. Pierson, president of the Daffin Corp., and Tom Hartman, sales manager, Superior division.

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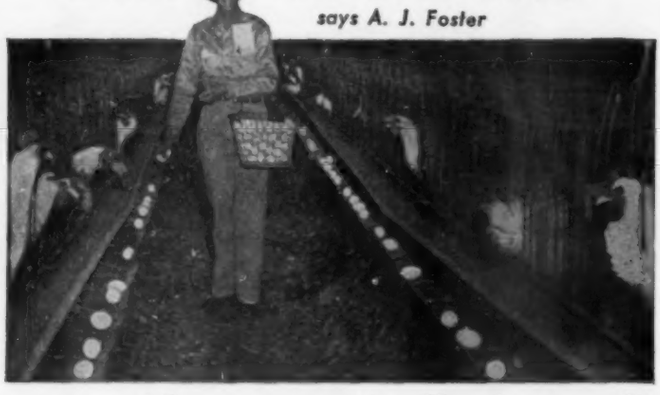

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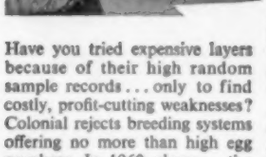

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Have you tried expensive layers because of their high random sample records . . . only to find costly, profit-cutting weaknesses? Colonial rejects breeding systems offering no more than high egg numbers. In 1960 alone . . . the BEST TRUE-LINES layers . . . COMPLETE layers . . . *strong in every profit trait* . . . emerged from *660* combinations of layer lines in 2, 3 and 4-way crosses. Blueprinted by Colonial geneticists; then *proved* under actual farm conditions on Colonial evaluation farms scattered across the U. S.

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COLONIAL POULTRY FARMS, INC.
General Offices
Pleasant Hill, Missouri

other question in minds of many farmers. The answers to this are difficult of course, but Mr. Fox said that it is a factor that feed men will have to take into consideration to a greater extent in the future.

Should I install equipment for mechanized feeding? That is often asked. Mr. Fox predicted that 75% of leading livestock producers would have their operations largely mechanized in the next 10 years, and this has important implications for feed men in the physical form of their feeds.

How about leasing my livestock to an expert who will milk the cows and fatten the meat animals? For some men in unusual circumstances this may provide an answer to a problem, Mr. Fox said, but he doubted that the time would come when most farmers would give up the finishing or productive stages of the livestock cycle.

Another problem cited by Mr. Fox was that of the "dainty" or slow eater in the milking parlor. Often the best producer, this animal does not fit well into a time-conscious milking cycle. Eventually such animals will be bred out of the picture, Mr. Fox said, but they will be a problem for the dairymen for some years ahead.

Am I feeding too much hay? Mr. Fox pointed out that the hayless ration for beef finishing is already widely accepted.

When will feed manufacturers in general equip their staffs with the service type technician who can size up a farmer and his operations and then give him answers to some of his problems? Mr. Fox said that farming has become a broad and complex operation and that the feed manufacturer probably will have to go much farther than he has in giving service of the broadest nature.

CHALLENGE OF CHANGE—Speaking at the president's luncheon, Dr. C. B. Ratchford, dean and director of extension, University of Missouri, called for greater internal and external teamwork by the feed industry to meet the challenges of change.

These changes will not stop occurring, Dr. Ratchford said, but will accelerate. No individual or industry is immune. "Our problem is to keep the livestock industry growing and prospering. If this happens, we will all benefit; if it doesn't, we will all be hurt."

To get the coordination that is needed, Dr. Ratchford suggested the following: "(1) Get to know each other personally. You should know the objectives of various divisions of the livestock industry — university staff people, extension workers, veterinarians, county agents, vo-ag teachers, as well as the farmers.

(2) "Take time to develop common goals or objectives.

(3) "Develop a common understanding of fundamentals.

(4) "Work at the job of coordination through formal and informal meetings and conferences."

Dealers Told They Must Change Methods

FT. WORTH — Burrus Feed Mills' Texo Feed dealers are being told in a series of meetings across the state of Texas that they "must change to modern methods such as bulk handling of feed and better services if they are to remain in the feed business."

Conducting the dealer education meeting is Wesley E. Ballmann, comanager of Burrus Feed Mills in charge of sales, and his five-member staff. The stated purpose of the 10 one-day meetings is to acquaint Texo dealers with the changes being made in the production and sales departments of Burrus Feed Mills to correspond with the changing feed economy.

In his talk to the dealers, Mr. Ballmann says, "A few years ago the forecast was that only one out of three feed dealers would remain by 1965. Now in 1961, only 2½ of these feed dealers remain. We must analyze, plan, set goals and adjust to the changing feed economy if we and our dealers are to survive. We are making these changes at the mill and encouraging all our dealers to do likewise."

The meetings are being held in Lubbock, Ft. Worth, Mt. Pleasant, Crockett, Brenham, Beaumont, Victoria, San Antonio and Temple, and will be attended by Texo dealers from New Mexico, Oklahoma, Arkansas, Louisiana and Texas. Staffmen participating in these meetings are: Randy Woodward, director of finance and poultry feed sales; Henry W. Hasse, assistant sales manager; Jake Holster, director of new dealer development; Ray Martin, livestock specialist, and Van Welch, sales promotion and advertising director.

H. D. Wallace H. R. Conrad

Poultry Field Reports To Be Presented at Maryland Conference

COLLEGE PARK, MD.—A special evening program which will include field reports on poultry nutrition will be one of the features of the Maryland Nutrition Conference, to be held March 16-17 at the Shoreham Hotel in Washington, D.C.

J. M. Snyder

Dr. R. D. Creek, conference chairman, announced that the evening program is set for 8 p.m. Thursday, March 16, in the Main Ballroom of the Shoreham. Owen D. Keene of the University of Maryland will be chairman of the session.

Dr. J. M. Snyder of the Beacon Milling Co. will report on the salt requirement of broilers; Edgar Quillin of Berlin (Md.) Milling Co. will discuss fish meal in broiler rations, and Dr. Edmund Hoffmann, Unity Feeds, Boston, will present a report on linear programming for least-cost feeds.

The regular conference program will take place Thursday, March 16, and Friday morning, March 17. Guest speakers will include J. G. Bieri, National Institutes of Health; H. R. Conrad, Ohio Agricultural Experiment Station; M. C. Nesheim, Cornell University; L. E. Ousterhout, Fish & Wildlife Service, and H. D. Wallace, University of Florida. In addition, Maryland scientists will present reports on some significant animal and poultry nutrition work at Maryland.

Ron Kleinke Joins Pamco Sales Staff

OSKALOOSA, IOWA — The appointment of Ron Kleinke, New Concord, Ohio, as a sales representative for Pamco, Inc., Oskaloosa, has been announced by company officials.

Mr. Kleinke will represent Pamco in the Ohio and southeastern Michigan areas.

Pamco manufactures bulk delivery trucks and equipment. Installation and distribution points are located at Portland, Ore.; East Grand Forks, Minn.; Tulsa, Okla.; Austin, Texas; Franklin, Ky.; Shelby, N.C.; Tupelo, Miss; Jefferson, Ga.; St. Paris, Ohio, and Bridgeville, Del., as well as at the home office at Oskaloosa.

Area Feed Men Elect

CORNELIUS, ORE. — Members of the Washington county district, Oregon Feed & Seed Dealers Assn., at a meeting here elected Myron Ray, Farmers Feed & Supply Co., Forest Grove, Ore., to serve as governor for the 1961-62 term. He succeeds Stan Cellers, Buchanan-Cellers Grain Co., McMinnville.

Mr. Ray Joins Floyd Packer, Corvallis Feed & Seed, Corvallis, on the association board of governors. Still to be elected are governors from the southern Oregon, Eugene and Salem districts. New governors will be installed at the annual association convention to be held March 16-17 at the Portland-Sheraton Hotel.

Oregon Group Hears Inter-Industry Report

SALEM, ORE.—The Oregon Fryer Commissioner's prime problem continues to be that of educating thousands of Beaver state consumers to look for the Oregon label when buying chickens.

This was emphasized by Steve Brody, commission manager, during the inter-industry council meeting here. Commission members, meeting before the inter-industry gathering, reviewed the commission's recommended 1961-62 budget for the expenditure of some $54,800. Following its approval by the commission, it will have to go before a public hearing to become final, Mr. Brody said.

Commission members also approved Mr. Brody's request to ask the industry to return to its original .017¢ lb. assessment from the present .014¢ one.

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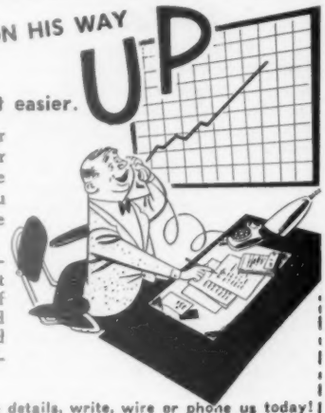
The Ultra-Life Program makes it easier.

Step up your tonnage, pep up your feed formulas, and improve your results on the farm in 1961. The Ultra-Life Program can help you expand profits and help you on the way up this year.

Ultra-Life leads the industry in products and services to independent feed manufacturers. Our 25 years of experience in providing vitamin and trace mineral fortification to feed manufacturers can help your business to grow in '61.



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They're experts in many fields . . . plant automation, efficiency evaluation, machinery design, financing and contracting. They originate radical new ideas and methods to change "it-can't-be-dones" into "I-wouldn't-have-believed-its".

As part of the Myers-Sherman automation engineering team, their job is to create new and better mills and mill equipment. They're the idea men whose revolutionary new concepts are incorporated in every piece of the famous Fords line we manufacture. Mills of their design which are completely operated electronically by one man are already in use and that's just the beginning.

You can put them to work designing your complete new mill . . . or modernizing your present one . . . at our expense! They'll show you how it should be planned to fit your individual needs . . . explain how we can take the whole job off your hands or tackle any part of it you wish . . . give you the details on the 54 convenient Myers-Sherman purchase plans that let you pay as you earn. We can even lease it to you if you wish!

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SCHOOL

(Continued from page 16)

be quite simple. There should be a receiving record on each new drug substance, and a perpetual inventory should be kept so that the course of a particular drug can be followed through the mill and so that every pound of material can be accounted for. . . . An accurate, clear mixing sheet for each feed should be maintained at the mixer. . . .

Drugs should be kept in a separate room under lock and key and available only to qualified personnel.

Drug substances should be added when the mixer is partially charged and not over three fourths charged. . . . There should be a standard checking procedure to assure the right labels are provided and used. . . . Be sure the right mixing time, as specified in the application, is followed. Yield should be checked on each mix and noted. . . . Flush out the mixing and conveying system after each run with an inert ingredient such as ground corn, and set this material aside and label it for use in the next run of a feed with the same drug. . . .

Required sampling and assaying should be carried out. FDA is insisting that the first three batches of a run and two or three batches out of each 100 be sampled and assayed. Assay laboratories charge $8 to $15 per assay.

COMPLYING WITH FEDERAL AND STATE ADDITIVE REGULATIONS—Dr. Wilgus moderated a workshop on food and drug regulations, assisted by Roy Stutzman of the Morton Chemical Co., Walter Krumbholz of the Leo Cook Co. and Robert Wornick of Chas. Pfizer & Co., Inc.

This session, one of several workshops at the school, dealt mostly with FDA regulations on medicated feeds. Points discussed included these:

—In the case of a custom mix, where there normally is no label, the feed man can send in a proposed label and a letter explaining it, stating the range used.

—Rodent and insect control materials should be used with care. For one thing, the feed man should guard against presence of bromide residue in feed, which can cause layers to quit producing or lay smaller eggs.

—There are no tolerances for some things, like seed treating substances.

—An effort is being made by industry to forestall the necessity of every feed mixer's obtaining an NDA in order to use a conventional concentrate containing a new drug. If this is required, the feed man could get a supplemental NDA on the basis of a particular company's concentrate; this could be done without stating the exact composition of the concentrate.

—Drug suppliers should provide individual cards showing levels of drugs, claims, etc., for various drugs used in feeds. Mr. Wornick noted also that his company is preparing information on what combinations, etc., may be used with a particular drug.

—If a drug is used in water in combination with a drug in the feed, where the combination has not been cleared, technically it is not legal. The feed industry has a responsibility to be careful on what is recommended.

—The feed miller must pay attention to physical facilities, including cleanout, in remodeling and designing a mill.

MAKING YESTERDAY'S MILLS DO TODAY'S BUSINESS—Ways to improve productivity in existing mills were pointed out by T. G. Burdsal of General Mills, Inc., San Francisco. Before doing this, however, he commented on certain developments in past years which brought mill modifications. These included addition of molasses to mash, pelleting, crumblizing, adding molasses to pellets, addition of micro-ingredients, paper bags, bulk feed, fat addition, bulk trucking fleets and life cycle feeds with more formulas.

To improve productivity, Mr. Burdsal noted, one can try to (1) reduce man-hours with same production rate or (2) increase production rate with the present man-hours.

Several points were mentioned as possible ways to reduce man-hours with the same output. Among them were these points, some brought out in the form of questions:

In receiving, would it be desirable in some cases to use a truck dumper? Does the elevator take ingredients away as fast as could be done by some simple modification? Processing is the point where an automatic batcher may come into use. Such a unit should be installed to save manpower or speed production, however, and really for no other purpose, said Mr. Burdsal. Bagging often can stand examination, for many plants attain 22 bags per minute with two men packing and filling or 11 per minute with one packing and filling with use of automatic equipment. For small volumes, there are some fine gross weighers that permit one man to weigh, sew and palletize 6 bags a minute. In bulk loading, Mr. Burdsal sees little improvement possible if a plant already has overhead tanks with a direct drop into the truck.

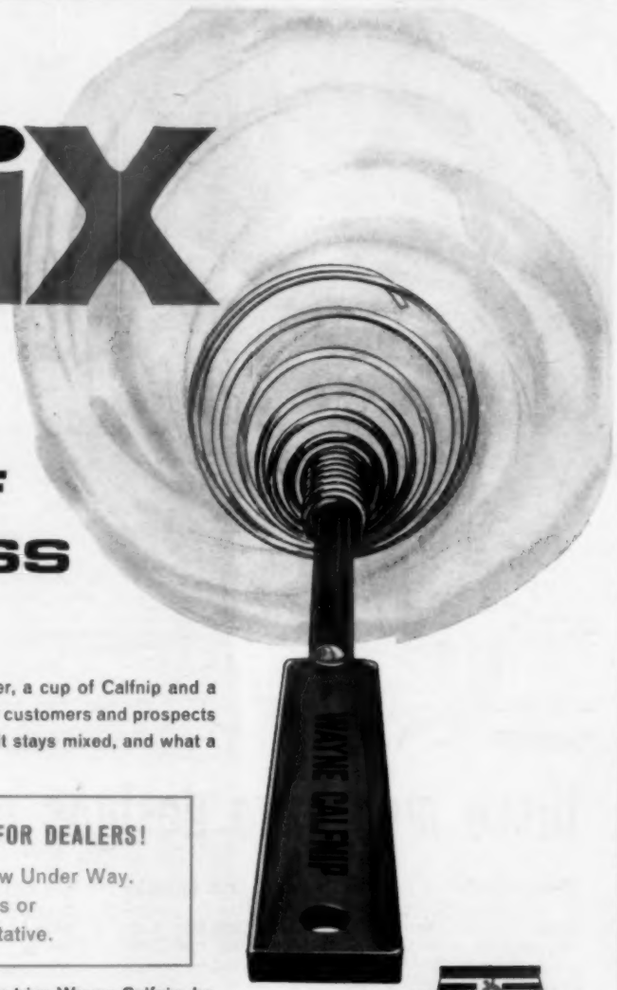
Comments on improving the plant production rate included the following:

In some cases there are bottlenecks in conveyor or elevator systems; there is no excuse for not catching and correcting these. In most mills, the greatest hindrance to efficient production is inadequate pelleting capacity. Some mills must pellet around the clock, while the mash for the product could be mixed in less than a shift. Mr. Burdsal also suggested stopping the elevating of molasses type mashes to pellet mash bins; perhaps, he said, molasses should be added at the mill to gain a higher percentage and yet get away from hangups in bins and clogged elevators and conveyors. Coolers, of course, should be directly beneath pellet mills; horizontal coolers may be used in some cases.

"Don't overlook the possibility of larger motors on existing mills as volume of production goes up almost in direct ratio to horsepower," Mr. Burdsal noted. "This is one of the best investments available to lower costs. . . . Many older motors can be rewound at the same rpm to the next larger size."

Automatic batching can save manpower and aid production through exact weighing and mixing cycles. A larger mixer or increasing volume of an elevator or conveyor often can help. Also, sizing batches to density of the feed rather than an arbitrary batch size for all feeds may help.

MODERN MILLS EAST OF THE ROCKIES—Some of the major trends which have affected the modern mills now serving the feed manufacturing industry were pointed out by Jerry



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Executive Offices: Chicago 4, Illinois

Japanese Visitors Tour Nutrena Farm

MINNEAPOLIS — Production systems for livestock and poultry were the center of keen interest for a six-man Japanese feed grain mission which toured the Cargill-Nutrena Research Farm at Elk River, Minn.

The group, on a month-long swing through the U.S., spent an afternoon looking over the experimental facilities at the farm and getting answers to questions from Dr. Cloy Knodt, research farm director.

Dr. Knodt explained to the group that research at the farm not only includes feeds and feeding programs but also buildings and equipment, management methods and marketing of end products. Farmers, he said, need help in such things as choosing strains of poultry, vaccination and other health measures. Thus, a "systems research" concept governs experimental activities at the farm.

Controlled Lighting

The visitors were shown flocks of layers on controlled lighting tests ("stimulighting"), which Dr. Knodt said have shown increased profits of per bird annually. They also were told of outstanding results obtained by the Coccivac vaccination method of combatting coccidiosis. Some 41,000 birds have been vaccinated at the farm, and none have shown coccidiosis symptoms in up to 24 months time, Dr. Knodt said. Before the vaccination program was started, extensive losses from the disease had occurred at the farm.

The visitors showed considerable interest in this information as coccidiosis also is a problem in Japan.

The tour also included inspection of the Pigloo system for swine in which sows are placed in isolation in individual huts before farrowing. Comparisons with central farrowing systems, also at the farm, show that the Pigloo method reduces diseases, losses and labor costs, Dr. Knodt said.

Sponsored by the U.S. Feed Grains Council, the U.S. tour helped acquaint the Japanese agricultural leaders with grain production and marketing, feed manufacturing, nutrition and disease research and feeding in several stops across the country.

(THIS ARTICLE APPEARED IN FEEDSTUFFS, OCT. 29, 1960)

Nutrena Mills Inc. has used and recommended the COCCIVAC—Trithiadol® program since 1958.

They also were told of outstanding results obtained by the Coccivac vaccination method of combatting coccidiosis. Some 41,000 birds have been vaccinated at the farm, and none have shown coccidiosis symptoms in up to 24 months time, Dr. Knodt said. Before the vaccination program was started, extensive losses from the disease had occurred at the farm.

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6x60 SPROUT-WALDRON CRUMBLE ROLL with TEFC motor and drive; No. 7 snappy shaker with motor and Barbeau drive; 30 H.P. California master model pellet mill with cooler and TEFC motors; 5W26 Jay Bee hammermill, direct connected to 150 H.P. TEFC motor with starter; two-ton horizontal mixer with 30 H.P. TEFC motor and Falk reducer drive; 12"x28' Slider belt conveyor with motor and drive; 48x84 Davis scalping shoe; 15.5 Kelly Duplex corn cracker with grader and power; 2" Roper molasses pump and power; G3S molasses feed sacking scale, rebuilt. Many other items. General Mill Equipment Co., 2021 Pennsylvania, Kansas City, Mo.

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Karstens, publication director of Feed Age magazine:

(1) Many manufacturers have "settled down to designing mills from economic necessity and efficiency rather than habit." (2) Manufacturers are concentrating more on needs of the more specialized large volume customers. (3) Integration—feed manufacturers are getting into feeding, and feeders, in some cases, are making feed. (4) Distribution patterns change—there are poor dealers who are disappearing and good ones who offer good services and sometimes require a mill. (5) Bulk vs. sacked feed—in 1953, 5% bulk and 95% sacked; in 1960, 40% bulk and 60% sacked. (6) Greater demand for pellets and crumbles—about 55% of the feed in such form now. (7) More automation—some now have punch-card systems; control panels appear to be a must. (8) Production is scheduled better, with less changeover and lost time.

(9) More ingredients and finished feed shipped in and out by truck. (10) Smaller trade area and more special service—more 80 ton mills being built. (11) Labor requirements have changed from three manhours per ton to three tons per manhour in some mills; with a diversified line, 1½ manhours per ton may be good. (12) Customers are more concerned about feed cost per unit of production; successful firms sell feeding programs. (13) Proper equipment and good men are needed with the use of additives. (14) Satellite mills—manufacturer supplies concentrate, engineering, nutrition and sales help.

Mr. Karstens went on to show pictures and flow diagrams of various types of feed plants in the Midwest, South and East.

HANDLING AND MIXING MOLASSES — A motion picture filmed and edited by Winslow Hall, western sales manager for Pacific Molasses Co., illustrated different types of facilities used to mix molasses and handle molassesized feeds.

Among the things shown by Mr. Hall were these:

—The use of an auger inclined at a 35° angle to mix molasses into feeds.

—Various bulk trucks used to haul and unload molassesized feeds, including a special bulk truck with a drag bottom and an auger and some pneumatic units.

—A mill in which molasses is injected directly into the steam line and steam and molasses go into a pellet mill together.

—A plant which uses a 2-ton horizontal batch mixer to add molasses to dairy feed. A 3-in. pipe, a 2-in. pump and a 10 h.p. motor put 300 lb. of molasses into the mix in 20 seconds through 18 holes 2 in. apart.

—Another plant with a similar method of mixing molasses into bulk dairy feed. The molasses is weighed into a heated scale tank, and an exactly measured amount goes into the 2-ton batch mixer. The batch is mixed until the measured amount is all in.

—A mill which stores mixed dairy feed dry and then molassesizes it on the way into a bulk truck as the last operation. This is done at a rate of 1 ton per 1½ minutes.

—An operation which makes a layer feed containing molasses, and the firm's cage laying houses where eggs are automatically picked up and crated, the birds are automatically fed from a traveling hopper, and the droppings are scraped off and pumped into the orchards.

—A feed plant which heats molasses in a small tank with a readily accessible strainer for quick cleaning. A large scale hopper is used for compounding feeds. A California pellet mill is said to do a good job of including a good percentage of molasses in dairy pellets.

—A feed mill which has a small tank on the roof that supplies hot molasses to the mixer. Described was the Hays meter and shown was the way this measuring element meters with a piston that displaces a fixed amount of molasses as it rotates. The film also showed the pneumatically controlled metering device and the generator which produces a signal applied to the meter to indicate rate of molasses flow. This indicator, installed at the mixing head, can be set for the exact rate of flow and is said to provide "perfect control" for molasses, either hot or cold.

PNEUMATIC VS. MECHANICAL CONVEYING — Leonard Thompson of the Reid-Strutt Co., Portland, said that every installation may be considered on its own merits but that several loose generalizations are possible. He listed these: (1) The pneumatic system lends itself well to multiple duty service in the very small mill. (2) Both positive and negative pressure systems are "outstanding" where contamination is a factor. (3) The positive pressure or combination suction and pressure systems lend themselves well to modernization or expansion plans where existing facilities are not ideal. (4) Pneumatic systems appear to be "excellent" for transferring numerous different products to bulk. (5) Pneumatic systems lend themselves well to fully or semi-automatic or remote control distribution systems.

Mr. Thompson presented some figures on comparative costs of pneumatic and mechanical conveying systems for a given installation, in two stages. The pneumatic system on the first phase, he said, was slightly more expensive on the installed basis, although first cost of equipment itself was considerably higher. When the entire system was expanded to include additional operations, the "economic superiority of the pneumatic system is quite obvious." Mr. Thompson also said that maintenance on the pneumatic system should be less. The example used, he observed, illustrates the "great versatility of both positive and negative pneumatic systems."

At the same time, he noted that pneumatic systems, while efficient and versatile, "are not the answer to every situation."

AIR VS. MECHANICAL MATERIALS HANDLING—A. R. Yurick, Pacific Elevators, Vancouver, B.C., moderated a workshop on air vs. mechanical handling. He was assisted by Leonard Thompson of Reid-Strutt Co., Portland.

Some of the things mentioned by panel members and feed men in the audience were:

—One mill using a pneumatic system for unloading and elevating grain moves 95 tons per hour of corn. It is a 125 h.p. system.

—One feed man said that with air unloading on bulk trucks, there are less maintenance, faster operation and easier hook-up. One man said the maximum distance his air trucks move feed is 60 ft. Another said 80 ft. on pellets. However, there is separation of mash if moved that far.

—One firm sent its best bulk truck driver out with other drivers to help

straighten out problems which arise. This was found to be a good method of training drivers.

—With fewer elbows in a pneumatic line, the power requirement is a "lot less."

—One firm with a pneumatic truck installed a pipe at each farm so that less flexible hose was needed, and results were much better.

—In unloading, a rubber flexible hose is used, and there is less wear problem.

—There is a greater horsepower requirement in an air unloading system. But, added Mr. Thompson, counting all the facilities and maintenance over a period of time, the cost of a pneumatic system is often less. For one thing, he said, no dump pit is needed.

—The insurance rate in country mills is lowered by 3% if bucket elevators are not used.

—Mr. Thompson said he recommended an air system over a mechanical system in moving salt. He mentioned some installations, among them one which had to retain the structure of the salt crystal and found that a positive pressure system with a high air ratio resulted in little damage.

—Another recommendation was use of air for rolled barley.

FEED MILL SANITATION—Some principles of insect and rodent control in mills and elevators were discussed by Roy Stutzman of the Morton Chemical Co., Chicago.

Some recent seizures have put more emphasis on rodent control as well as insect control. One firm recently had 32 cars of grain seized because of too many rodent pellets, and all the grain had to be recleaned. Two federal inspectors were paid $4 per hour each to oversee the job, plus subsistence cost, cleaning costs and loss of weight.

In regard to fumigation, Mr. Stutzman mentioned that control steps should be taken outside, in addition to fumigating the inside, so that rodents and insects won't be around to move right back in.

Good mill sanitation, he said, requires a program of good housekeeping in the mill and about the premises, together with proper use of pest-control chemicals. The task is not difficult or costly if a system is set up.

CUSTOMIZED INSURANCE — Al White of Bowles-White Co., Seattle, outlined in detail the various types of insurance which a feed mill operative should have.

Insurable risks, it was noted, include two broad categories: (1) loss of earning power—loss of property or benefits which can be expected; (2) loss of property—loss of property, assets or benefits already acquired.

FILMS — The school included a number of films of interest to feed men. Art Stegner of the Butler Mfg. Co., Kansas City, showed the Butler-sponsored film on problems of bin flow, a special color presentation which depicts the flow of various materials from bins with different types of bottoms. A film provided by the Conveyor Equipment Manufacturers Assn. showed some principles of conveying materials, and a film sponsored by Food Machinery & Chemical Corp. illustrated some materials handling systems.

• • •

Mill School Workshops Include Public Relations and Molasses Discussions

BELLINGHAM, WASH. — Workshop sessions which included special presentations and informal discussions among small groups of feed men were a feature of the seventh annual Pacific Northwest Feed Mill Production School in Bellingham.

School speakers and other authorities in certain fields of feed business operations led the discussions. (Some of the sessions are summarized in the accompanying story on the mill school.)

One of the workshops had a special illustrated presentation on public relations at the "grass roots level." This presentation—by Dick Kathe of the American Feed Manufacturers Assn., Chicago—did not deal with feed mill production but it was designed to help the managers of smaller feed businesses represented at the school.

Among other discussions was one on the use of a new product, a combination of phosphoric acid and molasses.

Summaries of these sessions follow:

PUBLIC RELATIONS AT THE GRASS ROOTS LEVEL — "Public and personnel relations," said R. L. Kathe, "can be one of your finest products and determine how easily you sell feed, how efficiently you produce, and the ease or difficulty with which you live under factors which control us—government, labor, suppliers, transportation and many others."

Mr. Kathe, who is director of public relations for the American Feed Manufacturers Assn., offered suggestions for improving relationships with various groups, including customers, employees, press, government officials, legislators, college people and others.

Some of the suggestions for better relationships included:

1. **Build a team**—employees are the most potent ambassadors of good will or ill will. Outline goals to employees and give credit where it's due. Use a newsletter for communications.
2. **Customer relations**—Work with such persons as truck drivers, counter men and those who answer the phone in order to have better direct contacts with customers. Some firms conduct abbreviated sales clinics for such people or send them to special clinics. Various incentives may be used, too. Plant tours, feeding demonstrations, youth projects are good tools in customer relations.
3. **Community relations**—Take part in civic and charitable programs.
4. **Veterinary relations** — Meetings with vets can help, and some feed men take special steps to build good relationships locally—for example, a feed salesman spotting a disease problem not recognized by the farmer offers to pay the $5 vet fee as a friendly service.
5. **Work with county agents, vo-ag teachers, etc.**—Work with bankers to help free some capital from a heavy load of customer credit; some dealers have started bankers on a sound program by giving them their best credit risks. Get to know control officials and state college people and extension specialists.
6. **Press relations** — Probably the best source of news you have is your company and customers. New and modernized facilities, community relations projects, etc., make news. New and good feeding operations and various success stories are grist for local news mills. Provide news releases if possible.

PHOSPHORIC ACID AND MOLASSES FOR ANIMAL FEED — One of the workshops, called "Open Season," was moderated by T. G. Burdsal of General Mills, Inc., San Francisco. Most of the time in this session was devoted to a discussion of a combination of phosphoric acid and molasses as a feed ingredient. This was led by Winslow W. Hall of Pacific Molasses Co. and George E. Sanko of the A. R. Maas Chemical division of Stauffer Chemical Co.

Mr. Sanko said that it is now possible to use liquid phosphoric acid, 75% feed grade, in regular feed mill operations. When this phosphatic feed supplement (PFS) is added to the molasses, it can be safely used, he said, and "with added benefits."

"When PFS and molasses are combined, the molasses acts as a diluent and vehicle or carrier for the acid and at the same time inhibits corrosion," said Mr. Sanko. "As little as 2% PFS addition to molasses improves its handling characteristics by reducing viscosity and cutting stickiness. This increased fluidity allows better penetration into the mash and enables a higher percentage of P-molasses to be used in bulk or pelleted feeds." Economy as a source of phosphorus also is claimed.

Mr. Hall said that the PFS makes molasses wetter and it soaks into the feed better. Production of pellet mills usually is increased when the combination is used, he said, citing figures from some feed operations. Molasses content of a ration can usually be increased by about 25%, according to Mr. Hall. Examples were mentioned in which molasses was treated with 2 or 3% PFS. The PFS contains about 24% phosphorus.

NEW EGG CARTON — Poultrymen feeding Tuxedo Feed can now market their eggs in a new egg carton made available by the Early & Daniel Co., Cincinnati, Ohio, manufacturer of Tuxedo Feed. The cartons are available from Tuxedo Feed dealers. The carton is the self-locking, fiber cushion type. It is white with a distinctive black and yellow design and printing. A space is provided for the poultryman to stamp the "grade" and "price" of the eggs.

Delmarva Poultry Seminar Planned

WILMINGTON, DEL.—Some 30 of Delmarva's top poultry executives are expected to attend a special seminar here March 13-16.

The four-day program will feature experts in various business fields. Subjects will include finance, business opportunities, management, labor relations and other such information which can be applied to the broiler industry. All sessions are to be held at the Hotel DuPont here.

Wilbur "Webb" Cassell, Salisbury, past president, Delmarva Poultry Industry, Inc., and chairman of the seminar committee, said, "Perhaps no single project conducted by this organization has ever resulted in more favorable reaction than did last year's seminar for executives. I believe this year's program is well balanced and provides an opportunity for serious study of some timely problems facing all of us."

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ASK FOR QUOTATION CARD

OHIO GROUP ELECTS—Carl A. Pitstick, seated right in the photo directly above, was elected president of the Ohio Grain & Feed Dealers Assn. at the group's recent annual convention in Columbus. George Moorhead, retiring president, gives him a welcoming hand. Standing, left to right, are: James S. Kile, first vice president; Richard Shirack, second vice president; George G. Greenleaf, executive secretary; George J. Forrester, corporation secretary, and Nelson J. Cotton, Jr., treasurer. In the photo at the right above are the new trustees elected to two year terms. They are, left to right: R. E. Royer, Harlan G. Thompson, Leon M. McCorkle and Carl A. Pitstick. A fifth trustee, not present, is Dale Seif.

AFMA Convention and National Feed Show

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At no other time during the year will you find more feedmen getting together for "brass-tacks" business than at the American Feed Manufacturers Association meeting and National Feed Show in Chicago, on May 7-10. It's the time of the year when your customers and prospects are new-products minded, when ideas are exchanged and plans develop. As in past years . . . it's become a tradition . . . Feedstuffs AFMA convention issue will be delivered to registrants' (about 2,000) hotel rooms on Monday morning. In this before "ham 'n eggs" copy of their newspaper, feed men will find convention news and notes, outstanding feature articles, plus all the important news they look for in their regular weekly copies of Feedstuffs. In short, the May 6 issue of Feedstuffs with bonus distribution and outstanding editorial content zeroed-in on interested readers adds up to a once-in-a-year opportunity for your advertising dollars to do double duty.

To their hotel rooms and to the Feed Show, Feedstuffs will carry your sales message . . . tying-in with your exhibit or, if you are not exhibiting, telling your sales message to the men who make up the $4 billion feed industry.

Advertising Deadline: April 24—Place your space reservation now by calling the nearest Feedstuffs office . . .

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Fishery Symposium Program Reported

WASHINGTON—Program for the third annual Fishery Symposium to be held at the Sheraton Park Hotel here March 15 beginning at 2 p.m. has been announced.

Program topics and speakers include: "Establishment of the Relative Values of Protein Supplements for Broiler Feed by Use of Linear Programming Techniques," Dr. Robert F. Hutton, department of agriculture and economics, Pennsylvania State University; "Nutritive Quality of Fish Meal Today," Dr. L. E. Ousterhout, biochemist, Bureau of Commercial Fisheries, Technological Laboratory, College Park, Md.; "Unknown Growth Factors in Fishery Products," Dr. H. R. Bird, chairman, poultry department, University of Wisconsin, and "Fish Oils—Source of Energy for the Living Fish," Dr. W. Duane Brown, research associate, Institute of Marine Resources, University of California.

The program has been scheduled for the day preceding the opening of the Maryland Nutrition Conference which is to be held March 16-17, according to J. Steele Culbertson, director, industrial products division, National Fisheries Institute, Inc.

I. S. Joseph Co. Sales Post to Clyde Kennedy

MINNEAPOLIS—The appointment of Clyde H. Kennedy as director of millfeed sales for the I. S. Joseph Co., Inc., has been announced by Burton M. Joseph, company president.

Clyde Kennedy

For the past 15 years Mr. Kennedy has been employed by the Archer - Daniels-Midland Co., Minneapolis, where his position was head buyer of the feed division. He replaces R. H. Sandberg, who is leaving I. S. Joseph Co., Inc., to take a new assignment with Oyster Shell Products Co., Mobile, Ala.

Mr. Kennedy will be in charge of the millfeed division, which includes millfeed, clear flour and wheat germ. The I. S. Joseph Co., Inc., is a merchandiser of feed ingredients including proteins, beet pulp and millfeeds.

Doughboy Plans Feed Laboratory in Iowa

AMES, IOWA—Construction of a quality control laboratory is under way at the Ames branch of Doughboy Industries formula feed division, according to Russell Solheim, general manager of the branch.

The new quality control center will be located at the company's feed plant here and will be used for testing ingredients and finished feeds, according to Mr. Solheim.

The project is being handled by Bernard Homrich, chief laboratory chemist for Doughboy Industries, and Robert Ahlin, nutritionist and director of research.

Since Doughboy joined forces with Ames Reliable last year, the samples have been tested at the company's quality control center at New Richmond, Wis.

The Ames laboratory is modeled after the main setup, the company reports.

The company says that its New Richmond laboratory has been cited as one of the top laboratories in the nation for accuracy in testing feed samples. It is further stated, "Of nearly 150 leading laboratories reporting 100 or more tests, Doughboy placed first among all midwestern feed companies."

BROILERS

(Continued from page 1)

are that 10 or 11 weeks may be the best point for marketability. Further development is needed to substantiate some of his findings, he said.

Dr. Wisman cited results obtained from a broiler experiment conducted at VPI in the summer of 1960. A total of 2,762 birds were used in the tests, which showed more returns were indicated from broilers at 10 weeks of age than earlier ages.

Report Discussed

His remarks caused later discussions during a panel workshop at the conference when several persons questioned him further regarding his experiments. Whether the marketing point should be 10 or 11 weeks remains to be determined definitely, he said, because experiments at VPI resulted in weekly weighings and this may have affected the weights of the birds.

This was the second year Dr. Wisman has reported on some of his findings. Last year the conference received information from him which was inconclusive, he said, and the past summer's tests further substantiate a belief on his part that there may be some merit in the idea.

He pointed out that how many housewives would buy larger birds remains to be seen. Also he stressed that he is not recommending the industry suddenly shift to this procedure.

"But in talking with housewives and some processors, I am not so sure but what a certain amount of the broiler production might be consumed in this field. How much remains to be seen," he said at a panel discussion following his talk.

"It seems to be that the 3-lb. bird is the magic by-word. We have increased efficient growth of birds. In 10 weeks, we have produced birds on 8½ lb. of feed, in 8½ weeks on 7 lb. of feed. If this type of efficient production continues, can we say this is the most efficient type of bird?" he asked, referring to the 3-lb. fowl.

"Data shows that production-wise, it would be economical to carry broilers beyond the customary 9-week body weight. While certain consumer problems would have to be worked out, it seems the poultry industry could gain in several ways," he said.

VPI Results

In the VPI tests, males were reared separately and grew faster with increased floor space (0.8, 1.0 and 1.2 sq. ft./chick) to at least 11 weeks of age. At 13 weeks both sexes were heavier at each increase in floor space.

With intermingled flocks, males grew faster at 0.8 and 1.0 sq. ft.; females grew slower at 0.8 but not at 1.0 sq. ft.

When the mean of both sexes was considered, he said, intermingling resulted in a slightly better growth at 1.0 but not at 0.8 sq. ft.

Tests also showed an approximately 3% loss in body weight occurred at 9, 11 and 13 weeks of age due to shipping. These tests were made over 25-mile secondary road tests.

Warm eviscerated yield, based on body weight just prior to slaughter, approximated 74% and was not different by treatment, except for a slight increase with age.

Further, carcass grades determined at 13 weeks by floor space groups indicated a decided upgrading in quality with increased floor space.

There was a marked increase in breast blisters, occurring only in males, after 9 weeks of age, he said.

Condemnation on all birds at 13 weeks was 2.7%, half of which was attributed to air-sac. Approximately half of these losses were estimated to have been incurred after 9 weeks, he said.

The most profitable market age varied between 10 and 12 weeks, depending upon the factors of sex, floor space and the methods of raising.

Labor income per square foot per year, excluding premiums on carcass quality, was greater for males than for females and for intermingled rearing than for separate rearing.

Considering all treatments, maximum labor income occurred for males reared at 0.8 sq. ft. to 11 weeks of age.

"Indications are that better quality can be obtained with more growing space. There was some increase in mortality, but I think this could be solved. We will need to give more attention to nutrition and condemnations and breeder control," Dr. Wisman said.

Citing tables kept on the experiment, Dr. Wisman said the total costs of production per pound per lot for combined sexes, reared intermingled, ranged from 15.75 to 14.80¢ over a period of 7 to 13 weeks with 0.8 sq. ft. At seven weeks, the cost was 15.75¢ and at 13 weeks it was 14.80¢. With 1.0 sq. ft. the seven weeks period had costs of 16.25¢, and at 13 weeks it was 14.76¢.

Mean body weight for 0.8 sq. ft. at 7 weeks was 2.08, and at 13 weeks it had gone to 4.73. With 1.2 sq. ft., the figures were 2.14 and 4.84 lb. with birds reared separately.

In sexes reared intermingled: 0.8 sq. ft. had 2.12 lb. at 7 weeks and 4.72 at 13 weeks. With more space (1.0 sq. ft.), seven weeks saw 2.10 lb. with 4.95 lb. at 13 weeks.

"You feed people would welcome the opportunity of selling 20% more feed," Dr. Wisman commented in concluding that perhaps the industry should consider more seriously producing at least a portion of larger fowls.

TURKEYS LIKE COLOR

ROANOKE, VA.—How to get those stupid turkeys to eat has been at least partially licked.

Dr. J. R. Couch, poultry department, Texas A&M College, College Station, Texas, says he has tried colored marbles and many other things.

But the best one of them all is colored feed. Losses were cut as much as 60% when he started feeding it in six different colors, he told the Virginia Feed Convention and Nutrition Conference.

It is not necessary to use large quantities of the colored product, and it can be used for only the first 3 to 4 days. As little as 2½ lb. per 1,000 birds will do the trick, Dr. Couch said.

Preston Moyer Heads Virginia Association

ROANOKE, VA. — Preston Moyer of Beacon Milling Co., Broadway, Va., was elected president of the Virginia State Feed Association at the annual convention in Roanoke. He succeeds W. G. Ritchie.

Two vice presidents were elected this year, marking the first time the organization has had two. Dick Barnett of Cooperative Mills, Roanoke, was elected first vice president, with Homer Kline of Homer Kline, Inc., Harrisonburg, being chosen second vice president.

E. B. Kaylor of Rockingham Cooperative Farm Bureau, Harrisonburg, was named secretary-treasurer.

The association went on record as opposing the Kennedy administration's plan of restricting feed grain acreage and also urged that a disease committee be set up in the state to recommend that adequate disposal pits be mandatory for poultry.

Next year's convention will be held in Roanoke on Feb. 20-21.

Five men were elected to three-year terms as directors: J. W. Reynolds, Roanoke; Dr. A. C. Rogers, Smithfield; S. C. Newman, Farmville; A. G. Maxwell, Salem, and R. W. Drake, Norfolk.

SURVEY

(Continued from page 1)

recommendation at the Chicago meeting for either the formation of a committee representing the several interests concerned to study the matter further, or dropping it altogether, said Mr. Kuzmeski.

Various recognized authorities on animal nutrition, he said, have stated that:

1. Crude protein, fat, and fiber guarantees alone are inadequate to reflect the quality of a feed.

2. Lists of ingredients, being mainly qualitative, serve no purpose other than to show that no harmful or otherwise objectionable ingredients are present.

3. Lists of ingredients are becoming increasingly cumbersome, and as this trend continues, will become more confusing to the farmer and to others.

4. Simplification of tag information is desirable.

5. The "open formula" would be almost, if not, impossible to check.

6. Requests by control officials for rigid adherence to declared lists of ingredients hamper manufacturers in their efforts to take full advantage of ingredient price fluctuations with consequent savings to farmers.

A copy of the questionnaire is found below. For those who did not receive one, this questionnaire can be clipped out, answered, and sent, with your name, title and address, to John W. Kuzmeski, official chemist, Massachusetts Feed Control Service, West Experiment Station, University of Massachusetts, Amherst, Mass.

Feed Labeling Study Questionnaire

1. Would it be practical to list in the AAFCO official publication the ingredients that would be considered acceptable for use in dairy, poultry, swine, pet, etc., rations? This would mean a separate list for each kind of animal. For example, oat mill by-product may be acceptable in dairy rations, but not in broiler or pet rations.

Yes ..... No .....

2. Would you favor the substitution of a statement such as "This feed contains no ingredients not listed in the AAFCO official publication as suitable for use in this type of feed" for the list of ingredients This would necessitate a change in state and federal laws.

Yes ..... No .....

3. Do you favor more quantitative guarantees such as those for calcium, phosphorus, trace minerals, key amino acids, and vitamins, especially for those that may be present in insufficient amounts unless great care is taken to use the right ingredients in the right amounts to supply these factors? This might apply also to the quantitative declaration of antibiotics for which no therapeutic claims are made.

Yes ..... No .....

4. Do you consider the present label information satisfactory?

Yes ..... No .....

5. Would you favor the "open formula"?

Yes ..... No .....

6. If there were no existing state and federal laws governing label information, and you were "starting from scratch" to develop the kind of label you think would be the simplest and most informative to the buyer and offer him the most protection, what changes, if any, would you make in present label information?

7. Other comments?

8. Do you think further study of this matter would result in improved label information?

Yes ..... No .....

Central Soya Names Eastern Sales Manager

FT. WAYNE, IND. — The promotion of Douglas G. Fleming to the position of eastern division sales manager for its McMillen feed division has been announced by Central Soya, Ft. Wayne.

Douglas Fleming

In his new position, Mr. Fleming will be headquartered at the company's Harrisburg, Pa., plant and will supervise the sale of Master Mix feeds in a six-state area.

Prior to his promotion, Mr. Fleming was located in Ft. Wayne.

He joined Central Soya in 1954 following graduation from Michigan State University and has since had a broad experience in the sales field.

Mr. Fleming has been a territory salesman and a district salesman in Michigan, and has had experience in handling broiler accounts. In 1957, he was a member of the Wildcat Club, the company's organization for top salesmen.

TOP OF THE HOPPER

(Continued from page 2)

place, the number of farms producing $10,000 or more of gross sales went up—from 582,000 to 794,000, or 36%.

As Dr. DeGraff notes, a new kind of farmer is rapidly taking over the nation's agricultural plant. He is a bigger operator, a better manager, more adequately financed and equipped—and certainly a more specialized producer.

TURKEY GROWERS IN THE SOUTH appear not too much concerned over the possibility of chicken producers expanding into turkey growing. At the turkey short course in Athens, Ga., at the University of Georgia the subject was discussed from the floor. Several attempts at combining the two have been made and it was pointed out only about one out of ten such operations is successful. Chicken people are scared of turkey production. Also not too many broiler growers are equipped or have the finances to get into turkeys.

CONTRACT POULTRY PRODUCTION, some observers say, will continue to move much more toward greater sharing of risks and more emphasis on production efficiency. One of the contract egg production programs which a feed manufacturer is carrying out gears payments to producers particularly close to production rate and profits from the operation.

The producer, who furnishes labor and facilities, is provided with started pullets which are kept for 14 months. He receives a base pay rate of 2¢ per dozen for up to 60% production. With production at 60 to 65%, he receives another ½¢; at 65 to 70%, an additional ½¢; at 70 to 75%, another 1¢; and at production of 75% and up, an additional 1¢. Also, the producer gets 50% of the profits after feed and other costs are figured. The base payment is made weekly, and the bonus payments after figuring rate of lay are made monthly.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 19¼¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, L.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,600 A 16¢ lb.; 300 D, 750 A 15½¢ lb.

Denver: Demand slow; trend steady; supply ample; 21¢ lb.

ALFALFA MEAL

Philadelphia: Demand and supply fair; 17% dehydrated $58.50.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $54.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $51.60; reground pellets $53.60.

Los Angeles: Dehydrated meal, 17% protein, 100,000 A $51@52, nominal; dehydrated pellet meal, 17% protein, 100,000 A $53@55, demand slow, trend easier, supply adequate; suncured meal 15% protein $44@45, suncured crumbles 15% protein $46@47, on both: demand fair, trend steady, supply ample.

Boston: Demand fair; supply adequate; dehydrated, 17% $57; suncured, 13%, sacked $46.60.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A, pellets, demand slow, trend firm, supply ample, bulk $49.50.

Kansas City: Demand fair; supply ample; trend stronger; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $47@48, reground pellets $48.50@49; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $48@51, reground pellets $49@52; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $51@53, reground pellets $52@53; suncured alfalfa, demand slow, supply adequate, 13% pellets $34@36, No. 1 ¼-in. $40, sacked.

Buffalo: Demand fair; trend steady; supply adequate; $65.60, sacked, Boston.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $47; sacked meal $52, Omaha basis.

Ft. Worth: Demand fair for dehydrated, slow for suncured; supply sufficient; sacked: dehydrated, 17%, 100,000 A $58.10@57.10, truck or rail; suncured: 13% ¼-in. grind No. 1 $48, truck; 15% fine ground, dry $50, with 2% fat added $52, rail or truck.

Portland: Demand slow; supply ample; trend unchanged; $46@73, sacked, depending upon type.

Denver: Demand fair; trend steady; supply ample; $45.

ANIMAL FAT (STABILIZED)

Louisville: Demand and supply good; trend very strong; up about 1¢ lb.; bleachable white 7¼¢ lb., white tallow 7¼¢ lb., yellow grease 6¾¢ lb., all in tanks.

Boston: Demand good; supply adequate; tallow 6¾¢ lb., yellow grease 6¼¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 7¼¢ lb.; yellow grease 6¾¢ lb.

Chicago: Demand good; trend higher; supply fair; tank truck or carlots, bleachable fancy tallow $7.12½ cwt., yellow grease $6.50 cwt.

Ogden: Supply ample; $6.38 cwt.

Kansas City: Demand good; trend firm; supply tight; stabilized prime tallow 6¾@7¢ lb.

Ft. Worth: Demand excellent; supply tight; prime tallow, tank cars 7¢ lb., drums 8¼¢ lb., f.o.b. north Texas packing plants, with returnable drums.

Salisbury, Md.: Demand good; supply limited; 6¾¢ lb., f.o.b.

Atlanta: Demand good; trend stronger; supply very limited; 6@6½¢ lb., f.o.b. Alabama and Georgia processing plants.

BARLEY FEED

Philadelphia: Demand slow; supply fair; $42.50.

Los Angeles: Demand fair; trend steady; supply adequate; standard rolled $3.05 cwt., standard ground $3.05 cwt., both sacked.

Boston: Demand slow; supply light; $44.

Chicago: Demand and supply fair; trend steady; $34, sacked.

Baltimore: Demand and supply fair; trend unchanged; $44.50, sacked.

Ogden: Supply ample; rolled $45@46, whole $40@41.

Milwaukee: Demand limited; supply fair; trend unchanged; feed barley 85¢ bu., bulk; barley feed $35.50 ton, sacked; ground feed barley $42.50 ton, sacked.

San Francisco: Demand fair; supply ample; rolled $61, ground $60.

Portland: Demand good; trend firmer; supply adequate; $45@45.50.

Denver: Demand fair; trend steady; supply ample; $1.85 bulk, $2.30 sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31.50, less than carlots $40.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Denver: Demand better; trend steady; supply ample; $24.50.

BLOOD FLOUR

Louisville: Demand good; trend steady; supply good; $92.50@95, sacked.

BLOOD MEAL

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

Louisville: Demand and supply good; trend steady; $92.50@97.50, sacked.

Chicago: Demand fair; trend higher; supply ample; 80% protein $130, sacked.

San Francisco: Demand good; supply fair; $6.50 a unit of ammonia, sacked.

Ogden: Supply good; $92.

Omaha: Demand good; trend strong; supply short; 80% $115, sacked, Omaha.

Portland: Demand fair; trend fully steady; supply adequate; $100, sacked.

BONE MEAL (STEAMED)

Louisville: Demand slow; trend steady; supply light; $100@105, sacked.

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked.

Cincinnati: Demand good; trend steady; supply ample; $105, sacked, Cincinnati.

Boston: Demand and supply steady; $100.

San Francisco: Demand good; supply ample; $75, sacked.

Buffalo: Demand fair; trend strong; supply light; $105, sacked.

Chicago: Demand good; trend higher; supply fair; $100, sacked.

Ft. Worth: Demand fair; supply sufficient; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Portland: Demand fair; trend steady; supply ample; $94.50@95, sacked.

Denver: Demand fair; trend steady; supply ample; $120.

BREWERS DRIED GRAINS

Los Angeles: Demand good; trend steady; supply limited; $51.50.

Philadelphia: Demand fair; supply light; $56.50.

Louisville: Demand fair to good; trend steady; supply good; $56, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $50.

Boston: Demand active; supply short; 26% $55.60.

Milwaukee: Demand limited; supply fair; trend weaker; $45 bulk, $53 sacked.

San Francisco: Demand fair; supply ample; $51, sacked.

Chicago: Demand slow; trend easier; supply ample; $43.50.

Buffalo: Demand fair; trend lower; supply good; $56, Boston.

St. Louis: Demand slow; trend easy; supply ample; $46.

Ft. Worth: Demand slow; supply sufficient; 26% protein $59.40, sacked.

BREWERS DRIED YEAST

Los Angeles: Demand good; trend steady; supply very limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Louisville: Demand fair; trend steady; supply good; 10@10½¢ lb., sacked.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.; all sacked.

Boston: Demand and supply steady; 11¢ lb.

Buffalo: Demand good; trend steady; supply ample; $8.75 cwt.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9½@12½¢ lb., L.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Omaha: Demand fair; trend improving; supply plentiful; 10¢ lb.

Portland: Demand fair; supply ample; trend unchanged; 12@13¢ lb.

Denver: Demand slow; trend steady; supply ample; 9¢ lb., f.o.b. warehouse.

BUTTERMILK (CONDENSED)

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Boston: Demand steady; supply light; 4½¢ lb.

Louisville: Demand dull; trend steady; supply very light; $4@4.25 cwt. in 500 lb. paper drums.

Ogden: Supply good; $4.40 cwt. drum.

Chicago: Demand moderate; trend firm; supply fair; 500 lb. barrels $3.05@3.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt. drum.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N. J.: Crystals $11.50, flour $5.50.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

Boston: Demand slow; supply light; granular No. 6 $110.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

San Francisco: Demand steady; supply ample; $141, sacked.

COCONUT OIL MEAL

Los Angeles: Demand and trend steady; supply ample; copra cake $63, March.

San Francisco: Demand fair; supply ample; solvent $52, expeller $69.

Portland: Demand slow; supply adequate; trend unchanged; $63.20.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 300 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply limited; 2½¢ lb.

Boston: Demand quiet; supply ample; $37.50@40.

Denver: Demand better; trend steady; supply ample; 3¼¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $53.60, meal $72.60.
Atlanta: Feed $57, meal $76.
Birmingham: Feed $55.50, meal $74.60.
Boston: Feed $58.50, meal $77.50.
Chicago: Feed $47, meal $66.
Cleveland: Feed $54.90, meal $73.90.
Denver: Feed $57.20, meal $76.20.
Ft. Worth: Feed $55.70, meal $74.70.
Indianapolis: Feed $52.20, meal $71.20.
Kansas City: Feed $47, meal $66.
Louisville: Feed $52.60, meal $72.60.
New Orleans: Feed $56.90, meal $75.90.
New York: Feed $58.10, meal $77.10.
Norfolk: Feed $57.50, meal $76.50.
Philadelphia: Feed $57.80, meal $76.80.
St. Louis: Feed $47, meal $66.

CORN OIL MEAL

Louisville: Demand dull; trend steady; supply light; $57.55, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $50.

COTTONSEED OIL MEAL

Cincinnati: Demand poor; trend higher; supply adequate; $61.

Memphis: Demand fair; trend steady to higher; supply ample; prime 41% protein old process $55; new process 41% protein, none available.

Philadelphia: Demand and supply fair; trend unsettled; $69, 30 ton cars.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Los Angeles: Demand good; trend steady; supply ample; $55@57, March.

Louisville: Demand reasonable; trend strong; supply normal; new or old process $64.60, sacked.

Boston: Demand fair; supply adequate; $74.80, sacked.

Kansas City: Demand good; trend strong; supply of spot scarce; 41% old process $55@55.50; solvent process $55@55.50, Memphis.

Chicago: Demand good; trend higher; supply fair; Memphis basis: hydraulic $55.50, solvent $56.50.

St. Louis: Demand fair; trend firm; supply ample; solvent $59.

San Francisco: Demand fair; supply ample; solvent 41% $59.20; solvent 44% $62.20.

Ogden: Supply good; 41% $61@63.

Omaha: Demand good; trend strong; supply fair; 41% solvent $62, delivered Omaha.

Buffalo: Demand fair; trend higher; supply adequate; $77.20, sacked, Boston.

Ft. Worth: Demand fair for old process and hulls, improved for solvent; supply sufficient; 41% old process $63, f.o.b. mills Ft. Worth; carlots, solvent 2% fat added $57, delivered Ft. Worth; pellets $2 additional, hulls $23.

Portland: Demand fair; trend higher; supply adequate; $63.20.

Atlanta: Demand good; trend stronger; supply light; 41% $58 Georgia, $59 South Carolina, $55 north Alabama, $54 Mississippi and Tennessee producing mills.

Denver: Demand fair; trend steady; supply ample; $59.50.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9½¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Portland: Demand fair; trend steady; supply ample; $93.50@95 for product carrying a minimum of 18% phosphorus; 31.5% calcium and a maximum of 0.1% fluorine; $92@93.50 dock, for a minimum of 10 ton lots.

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Denver: Demand slow; supply ample; $88.50, delivered carload.

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $86, bagged, in carloads or truck loads; $96, bagged, in less than carload lots; 21% P, $94.95, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices, per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $31 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $31, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $56.

Philadelphia: Demand fair; supply very light; $74.50.

Louisville: Demand fair; trend steady; supply improving; bourbon grains: light $66, up $2; dark $67, up $2; solubles $73, steady; all sacked.

Boston: Demand active; supply scarce; dark $73.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Buffalo: Demand good; trend steady; supply fair to poor; $72, Boston.

DRIED BEET PULP

Los Angeles: Demand good; trend firm; supply limited; $49.90, nominal, March.

Boston: Demand fair; supply spotty; $62, sacked.

Portland: Demand fair; supply ample; trend unchanged; $47.58, sacked.

Atlanta: Demand fair; trend steady; supply limited; $60.22, sacked, delivered.

Denver: Demand fair; trend steady; supply ample; $65.

Milwaukee: Demand limited; trend firm; supply fair; plain and molasses $54.25, Chicago basis.

Ft. Worth: Demand slow; offerings light; plain $62.20, sacked, 50 lb. bags.

San Francisco: Demand good; supply fair; $44.80.

Ogden: Supply ample; $45.

Buffalo: Demand and supply fair; trend higher; $62.50, sacked, Boston.

DRIED BUTTERMILK

Louisville: Demand fair; trend steady; supply ample; 12@12½¢ lb., sacked.
Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked.
Boston: Demand light; supply short; 14¢ lb.
Milwaukee: Demand and supply limited; trend firm; $11 cwt., sacked.
Chicago: Demand quiet; trend firm; supply fair; medium acid $10.75@11 cwt., sweet cream $10.75@11 cwt., both sacked.
Ogden: Supply ample; $17.25 cwt.
Buffalo: Demand fair; trend steady; supply short; $11.30 cwt.
San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.

DRIED CITRUS PULP

Los Angeles: Orange pulp $43, lemon pulp $41, both nominal.
Boston: Demand slow; supply adequate; $39, sacked, f.o.b. Florida.
Atlanta: Demand fair; trend steady; supply good; pulp $37.50@40, sacked, f.o.b. Florida processing plants; meal $37.50, sacked, f.o.b. Florida processing plants.
San Francisco: Demand and supply fair; meal $48, sacked.
Buffalo: Demand and supply fair; trend steady; $40.50, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Louisville: Demand fair; trend steady; supply ample; 12@12½¢ lb., sacked.
Philadelphia: Demand slow; supply fair; $13 cwt.
Los Angeles: Demand slow; trend steady; supply adequate; 15¢ lb., less than ton lots; 14½¢ lb., ton lots; both sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
Boston: Demand and supply good; 12¢ lb.
Milwaukee: Demand and supply limited; trend firm; $13 cwt., sacked.
Ogden: Supply ample; $15.15 cwt., sacked.
Buffalo: Demand fair; trend steady; supply ample; spray $11.65 cwt.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Chicago: Demand fair; trend steady; supply ample; $10.75@11 cwt., sacked.
Omaha: Demand good; trend strong; supply short; 12¢ lb.

DRIED WHEY

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.
Philadelphia: Demand slow; supply fair; $6.25 cwt.
Louisville: Demand slow; trend steady; supply normal; 5¾@6¢ lb., sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Boston: Demand and supply steady; 5¼@5½¢ lb.
Portland: Demand fair; trend steady; supply ample; $5.75@6 cwt., sacked.
Denver: Demand slow; trend steady; supply ample; $5.25, delivered.
Omaha: Demand and supply fair; trend improving; $5.50 cwt.
San Francisco: Demand steady; supply good; $5.25 cwt., sacked.
Ogden: Supply good; $6.90 cwt., sacked.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.
Chicago: Demand quiet; trend firm; supply ample; $4.75@4.85 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5, sacked, delivered Ft. Worth; ton lots $5.25, f.o.b. warehouse Ft. Worth.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand good; trend steady; supply adequate; 90¢ a unit of protein, sacked.
Boston: Demand good; supply light; $70, sacked, f.o.b. shipping point.
Ft. Worth: Demand slow; supply sufficient; 85% protein $65@67.50 bulk, $67.50@70 sacked, delivered Ft. Worth.
Salisbury, Md.: Demand excellent; supply very limited; $62, f.o.b.
Atlanta: Demand good; trend stronger; supply ample; $69@70, f.o.b. Alabama and Georgia processing plants.

FISH MEAL

Ogden: Supply ample; $1.10 a unit, f.o.b. Coast; 65% $110@118.
Milwaukee: Demand limited; trend firmer; supply fair; 60% $118, sacked, Chicago basis.
Chicago: Demand very broad; supply light; trend higher; sacked: menhaden, East Coast $98@100, Gulf $98@100; menhaden scrap, East Coast $94@96, Gulf $94@96; Canadian herring meal $1.65 a unit of protein.
Buffalo: Demand improved; trend very firm; supply limited; 60% protein menhaden $107.50 bulk, $112.50 sacked.
San Francisco: Demand slow; supply ample; $1.60 a unit of protein.
Omaha: Demand and supply good; trend strong; 60% menhaden $115, f.o.b. Omaha.
Ft. Worth: Demand good; supply scarce on Peruvian, tightening on menhaden; sacked: 65% protein Peruvian, nominal $100; 60% protein menhaden $107, delivered Ft. Worth.
Los Angeles: Demand very good; trend firmer; supply very limited; local production, 60% protein $1.70 a unit, sacked.
Louisville: Demand slow; trend steady; supply light; $100, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $98.70.
Boston: Demand good; supply fair; 60% $95.
Atlanta: Demand good; trend stronger; supply limited; 60% menhaden $103@105, sacked, middle Atlantic ports; imported, $100, sacked, Gulf ports.
Portland: Demand fair; trend higher; supply tight; $1.70 a protein unit, sacked.
Denver: Demand better; trend steady; supply ample; $1.50 a protein unit.

HAY

Philadelphia: Demand slow; supply light; $25.50.
Wichita: Demand good; supply sufficient; prairie $24@27, alfalfa $32@34, baled.
Los Angeles: Demand slow; trend steady; supply ample; U.S. No. 1 $30@32; U.S. No. 2 leafy $28@29; U.S. No. 2 green $28@29; U.S. No. 2 $26@27.
Louisville: Demand dull; trend steady; supply ample; local hay, any variety, No. 1 $30, No. 2 $28; lespedeza $23@25; straw $18@20.
Cincinnati: Demand poor; trend steady; supply adequate; second cutting alfalfa $36; No. 1 timothy $25; red clover $30; No. 1 timothy and clover mixed $30; straw $18.
Boston: Demand and supply steady; No. 2 timothy $39@41.
Ogden: Supply ample; $25 ton in the barn.
Ft. Worth: Demand fair; supply sufficient; carlots, baled, No. 1 alfalfa $40@44; No. 2 $38@42, delivered Texas common points.
Portland: Demand slow; trend barely unchanged; supply ample; $30@32, baled, Portland-Seattle.

HOMINY FEED

Chicago: Demand and supply fair; trend steady; $41.
Milwaukee: Demand and supply fair; trend stronger; $42 bulk, $47 sacked, both Chicago basis.
St. Louis: Demand slow; trend easy; supply ample; yellow $40.
Kansas City: Demand fair; trend steady; supply ample; yellow hominy $34@34.50; white hominy $33@33.50.
Buffalo: Demand and supply fair; trend steady to higher; $51.50, Boston.
Louisville: Demand very dull; trend steady; supply normal; $47.50, sacked.
Cincinnati: Demand poor; trend steady; supply adequate; $44.
Memphis: Demand poor; trend steady; supply ample; white $41.80, yellow $41.80.
Boston: Demand fair; supply adequate; $51.50.

LINSEED OIL MEAL

Omaha: Demand fair; trend steady; supply ample; 34% solvent $63.50; 32% old process $68; Omaha basis.
Milwaukee: Demand and supply fair; trend firm; expeller $73.50, solvent $68, both sacked, Chicago basis.
Chicago: Demand good; trend higher; supply fair; Minneapolis basis: solvent $57, expeller $62.50.
San Francisco: Demand fair; supply ample; $72.
Kansas City: Demand fair; trend steady; supply adequate; solvent process $56.50@57; old process $62@62.50, Minneapolis.
Philadelphia: Demand and supply fair; 34% $74.
Wichita: Demand fair; supply ample; 34% $75, sacked.
Ft. Worth: Demand slow; supply sufficient; 34% protein, extracted $73.70, March.
Louisville: Demand fair; trend easy; supply normal; old process $78.50, new process $73.50.
Los Angeles: Demand and trend steady; supply ample; local production, 31% protein $71, March.
Cincinnati: Demand poor; trend higher; supply adequate; new process $57.50; old process $62.50; Minneapolis.
Boston: Demand fair; supply spotty; 34% $74.20; old process, 32% $80.20.
Portland: Demand slow; trend firm; supply ample; $87, sacked.
Denver: Demand fair; trend steady; supply ample; $70 bulk, $75.50 sacked.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply plentiful; 65% $165, sacked, Omaha.

MALT SPROUTS

Chicago: Demand and supply fair; trend easier; No. 1 $41.
Milwaukee: Demand good; trend strong; supply limited; $42 ton, bulk; $49 uneven bags; $50 even bags.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $47.
Boston: Demand and supply limited; $48, nominal.

MEAT AND BONE MEAL

Chicago: Demand good; trend higher; supply fair; 50% protein $95 cwt., sacked.
Kansas City: Demand good; trend firm; supply tight; 50% $90@92.50.
Ft. Worth: Demand good; supply light; meat and bone, 50% $85 bulk, $88 sacked, f.o.b. Ft. Worth.
San Francisco: Demand good; supply ample; $1.70 a unit of protein.
St. Louis: Demand good; trend firm; supply limited; $91.
Buffalo: Demand good; trend very firm; supply light; 50% meat scraps $95 bulk, $100 sacked.
Ogden: Supply ample; 50% protein $87.50, sacked.
Omaha: Demand good; trend strong; supply short; $95.
Wichita: Demand heavy; supply insufficient; 50% $95, sacked, f.o.b. plant.
Los Angeles: Demand excellent; trend stronger; supply limited; 50% protein $1.70@1.80 a unit.
Louisville: Demand and supply good; trend steady; $90@95, sacked.
Cincinnati: Demand good; trend strong; supply short; 50% meat and bone scraps $88.50, Cincinnati.
Boston: Demand good; supply adequate; $1.40 a protein unit; converted, 50% $82.50.
Denver: Demand good; trend steady; supply short; $91, delivered.
Portland: Demand fair; trend higher; supply tight; $90, sacked.

MILLFEED

Kansas City: Demand fair; trend steady to firm; supply tight; sacked, bran $38@38.50, shorts $35.50@36; bulk, bran $32.50@33, shorts $33.50@34, middlings $33.50@34.
Wichita: Demand good for bran, fair for shorts; supply adequate; basis Kansas City: bran $37@37.50, shorts $34.25@34.75, sacked; bran advanced 75¢, while shorts declined $1, compared with the preceding week; bulk middlings, unchanged at $30@30.50, with demand fair.
Ft. Worth: Demand fair; supply adequate; bran, bulk $38.60, burlaps $43.10; gray shorts, bulk $37.60, burlap $41.60; bulk middlings $37.60, delivered Texas common points; 40@90¢ lower on all except $1.90 lower on sacked bran, than previous week.
Chicago: Demand fair; trend higher; supply ample; standard bran $39.
St. Louis: Demand slow; trend easy; supply ample; sacked, bran $43.50, shorts $41; bulk, bran $38, middlings $38.
Omaha: Demand good; trend firm; supply ample; sacked bran $38.50, sacked gray shorts $36, bulk standard midds. $35, all Omaha basis.
Cincinnati: Demand fair; trend steady; supply adequate; bran and middlings $41@43.
San Francisco: Demand good; supply fair; millfeed $46.05, red bran $49.50.
Ogden: Supply good; to Utah: red bran and millrun $36, middlings $41.
Boston: Demand slow; supply adequate; bran and middlings $49.60.
Buffalo: Middlings pulled up even and in some instances at a premium above bran last week for the first time in a month; it resulted from a combination of low consumer inventories, increased consumption and curtailed supplies stemming from reduced flour mill running time; mixers' dairy business was off a little during the week; country trade demand slipped a little; action here was universal, and levels here remained even to within 50¢ of all competition on a Boston basis; sacked differential on bran and middlings narrowed to $6 from $7; bulk bran ended up $1@2; sacked was unchanged to $1 higher; bulk middlings jumped $3.50@4.50 and sacked advanced $2.50@3.50; red dog held a $1 premium over middlings; quotations March 1: bulk bran $41.50@42.50, sacked $47.50@49.50; bulk middlings $41.50@44, sacked $47.50@50; bulk red dog $42.50@46.50, sacked $48.50@52.
Philadelphia: Demand and supply fair; trend very unsettled; bran $48, standard midds. $47, red dog $48.
Memphis: Demand fair; trend steady to higher; supply ample; wheat bran $38, gray shorts $38, standard midds. $38.
Louisville: Demand fair; trend weak; supply good; bran $47.05, mixed feed $46.20, shorts $45.80, all sacked.
Portland: Demand fair; trend steady; supply tight; $37.50@38.
Denver: Demand fair; trend steady; supply ample; shorts $39.25, bran $41.25, millrun $40.50.
Los Angeles: Demand fair; trend stronger; supply adequate; standard millrun $45@46, red bran $50@51.

MINERAL FEED

Ogden: Supply good; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.
Ft. Worth: Demand good; supply adequate; all-purpose granules $85, block $95; mineral phosphorus granules $106, block $113; cattle-sheep mineral, 7% phosphorus granules $97, block $105; hog mineral phosphorus 2½% granules $87, phosphorus 2% $72 (all in 50 lb. paper bags).
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Wichita: Demand heavy; supply sufficient; all-purpose with iodine 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.
Portland: Demand fair; trend steady; supply adequate; $42.

MOLASSES

San Francisco: Demand and supply good; $25.75, f.o.b. cars, Richmond, Cal.
St. Louis: Demand slow; trend steady; supply ample; 13¢ gal., tank car, New Orleans.
Milwaukee: Demand and supply fair; trend strong; blackstrap 13¼¢ gal., f.o.b. New Orleans.
Kansas City: Demand fair; trend firm; supply ample; blackstrap 13@13¼¢ gal., f.o.b. New Orleans.
Buffalo: Demand fair; trend steady; supply adequate; 16½¢ gal., f.o.b. Albany.
Ft. Worth: Demand fair; supply sufficient; blackstrap 13¼¢ gal., Houston; truck $29.35, delivered Ft. Worth, seller's market price on date of shipment.
Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.
Memphis: Demand fair to slow; trend steady; supply ample; blackstrap 13@13¼¢ gal., tank car, f.o.b. New Orleans, and $29.50 ton, delivered Memphis, truck.
Los Angeles: Demand good; trend firmer; supply adequate; $25.50, f.o.b. tank cars; $25.75, f.o.b. tank trucks.
Louisville: Demand fair; trend steady; supply good; 13¢ gal., tank car lots, f.o.b. Gulf ports.
Boston: Demand steady; supply ample; 16½¢ gal. in tank cars.
Atlanta: Demand good; trend steady; supply limited; citrus $20@21, f.o.b. Florida processing plants.
Denver: Demand fair; trend steady; supply ample; $33.60, tank.

OAT PRODUCTS

Memphis: Demand poor; trend weak; supply ample; 3½% protein reground oat feed $23.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $42.20; reground $23.30, sacked.
Chicago: Demand fair; trend easier; supply ample; reground oat feed $12@12.50; No. 1 fine ground feeding oatmeal $66; feeding rolled oats $70.
Philadelphia: Pulverized white, demand slow, supply fair $48.30; domestic, demand slow, supply fair $24.50; Canadian oat feed, demand fair, supply light $30.50, sacked, nominal.
Los Angeles: Demand slow; trend weaker; supply adequate; local production, pulverized $64, sacked.
Louisville: Demand fair; trend steady; supply normal; reground $24.40, rolled $78.90, feeding $74.40, pulverized $50.40, crimped $63.90, all sacked.
Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $45@51.
Boston: Demand and supply steady; white pulverized $54.50; reground oat feed $27, both sacked.
Portland: Demand slow; trend steady; supply adequate; No. 2 extra heavy $55.50.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.
Louisville: Demand good; trend steady; supply normal; in 80 lb. paper bags $23.95, 50 lb. paper bags $24.20, 25 lb. paper bags $26.45.
Los Angeles: Demand fair; trend steady; supply ample; $15.40, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85, 50 lb. bags $24.10, 25 lb. bags $26.35.
Boston: Demand and supply steady; in paper $26.52.
Portland: Demand fair; trend steady; supply ample; $27.50@35, sacked, depending upon section where produced.

PEANUT OIL MEAL

Milwaukee: Demand and supply limited; trend stronger; 26% $48 bulk, $52 sacked, both Chicago basis.
Atlanta: Demand fair; trend steady; supply light; 45% $53.50 for expeller, $52.50 for solvent, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.
San Francisco: Demand and supply fair; $3.65 bale.
Philadelphia: Demand good; supply very light; $3 a bale, f.o.b. pier.
Los Angeles: Demand fair; trend steady; supply nominal; Canadian 5.6 cu. ft. bales $3.65.
Cincinnati: Demand and supply good; trend steady; truck loads $3.45 a bale, f.o.b. Cincinnati.
Boston: Demand and supply steady; $3.15 a bale in carlots.
Portland: Demand good; supply ample; trend unchanged; $3 a 5.6 cu. ft. bale.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.50, 200 lb. in 100 lb. drums $1.50, 100 lb. drums $1.51, 25 lb. drums $1.53, f.o.b. Cincinnati.
Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends, 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb., delivered basis.

POULTRY BY-PRODUCTS

Ft. Worth: Demand excellent; supply limited; $90@92, nominal, sacked, f.o.b. north Texas plant.
Los Angeles: Demand good; trend firmer; supply adequate; $1.55 a unit of protein, sacked.
Boston: Demand and supply fair; sacked $87@88.
Atlanta: Demand good; trend steady; supply tight; meat meal $76@78, f.o.b. Alabama and Georgia processing plants.
Salisbury, Md.: Demand excellent; supply very limited; $84, f.o.b. bulk.
Atlanta: Demand good; trend steady; supply light; bran $47.50, sacked, delivered.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplement) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good; supply very scarce; rice bran $37@38, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked.
San Francisco: Demand good; supply ample; bran $41, sacked.
Los Angeles: Demand and supply limited; trend steady; California production, high fat content, bran $52.50, sacked.

SCREENINGS

Buffalo: Demand and supply fair; trend steady; ground, sacked $37, New York; unground, bulk $29, New York.
Chicago: Demand and supply fair; trend steady; ground grain $31.50; Canadian $26, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; unground grain screenings $23@24.

SOFT PHOSPHATE
(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.22.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUM

Ft. Worth: Demand fair; offerings light; No. 2 yellow milo $2.07@2.09 cwt., delivered Texas common points.
Ogden: Supply ample; milo $41@42.
Los Angeles: Demand good; trend steady; supply adequate; milo $2.27½ cwt.

SOYBEAN OIL MEAL

Memphis: Demand poor; trend steady; supply ample; prime 44% solvent $65, f.o.b. Memphis.
St. Louis: Demand slow; trend firm; supply ample; 44% $69.50.
Chicago: Demand fair; trend higher; supply ample; Decatur basis, 44% protein, unrestricted billing $66@67 and E.T.L. $63.50; 50% protein, unrestricted billing $71@72 and E.T.L. $68@69.
Kansas City: Demand good; trend steady to strong; supply adequate; 44% solvent process $63@64, Decatur.
San Francisco: Demand fair; supply ample; $87.60.
Ogden: Supply ample; 41% protein $75@76; 50% protein $80@81.
Milwaukee: Demand and supply fair; trend stronger; $66, Decatur.
Omaha: Demand slow; trend firm; supply ample; 44% $70, delivered Omaha.
Ft. Worth: Demand fair; supply sufficient; 44% $73.30, scattered March; 50% $78.80, March.
Louisville: Demand dull; trend strong; supply normal; $78.20, sacked, up $6.
Cincinnati: Demand poor; trend higher; supply adequate; $68, Decatur.
Philadelphia: Demand and supply fair; trend very unsettled; 44% $65, Decatur.
Wichita: Demand good; supply ample; 44% $77, 50% $82, sacked; 44% $73, 50% $78, bulk, f.o.b. plant.
Los Angeles: Demand and trend steady; supply very limited; $88.60.
Boston: Demand good; supply adequate; 44% $63.50, 50% $69, both f.o.b. Decatur.
Atlanta: Demand good; trend weaker; supply good; 44% $70, delivered.
Portland: Demand good; trend higher; supply tight; 44% $88.50.
Denver: Demand good; trend steady; supply ample; 44% $78.

RUFIS

(Natural Live Dried Rumen Bacteria)

Results speak for themselves. That is why thousands of tons of Dairy and Beef Cattle Feeds containing RUFIS are sold by leading feed manufacturers each year.

POUL-AN LABORATORIES, INC.

621 West 33rd St. Jefferson 1-1597
Kansas City, Missouri

CREDIT

(Continued from page 1)

resolution of last year to clean up their problems and were aided in this by a relatively favorable 1960 cost vs. price situation among their farm customers.

There was a more general feeling of optimism among the credit men this year. Some criticism was leveled at country banks for taking chattel mortgages on everything in sight when financing cattle purchases, leaving the feed man with nothing to back up credit requested for purchases of feed. Bankers present felt that this was not a typical situation, however, but rather the exception, and that the current trend was to finance a specific project in every phase—cattle, feed and other requirements—in one sum at one source.

Privately the credit men also expressed some apprehension of possible trouble with turkey financing if some of the earlier predictions of greatly enlarged turkey feeding in 1961 prove true. Otherwise, things seemed serene.

Credit Importance

The growing importance of the credit man in the feed industry was pointed out by Maurice Johnson, vice president, First National Bank, Kansas City, in a talk concluding the conference. Mr. Johnson said that the credit executive is becoming a "key" position in feed milling, one of three major focal points in the new look that is being given the feed industry by the current upswing in integrated farm products operations. He said these three "key" positions in the feed manufacturing industry now are: (1) The credit executive responsible for the intelligent application of financing to the expansion of the company's business; (2) the production executive responsible for the creation of the most productive feeds at the lowest possible cost, and (3) the end-product marketing executive who must arrange the consumption of the farm products produced in these integrated projects.

Mr. Johnson said the feed industry is now using a more mature approach to credit problems. This involves making a more careful analysis of the costs of production and experience records of the feeders to whom financing is extended.

Cost Understanding

This must involve, he said, a more widespread understanding of what average costs of production are in well-run feeding projects, and he said that good cost levels are beginning to be known and understood rather widely. It is obviously risky and senseless to finance a feeder whose costs of production are at the high end of the range. These high cost operators must be the first to be forced out by declining prices and a low cost of operation is the best security that any feeder can offer a lender.

Some good bench-marks for sound credit extension, Mr. Johnson said, are these:

(1) What are the feeder's costs of production? How does he control these costs?

(2) Is the feeder experienced in the type of project you are financing? Does he have a record of past success?

(3) Are the feeder's management practices sound?

(4) Is there a good market available for the feeder's output?

To the extent that these standards are recognized and applied, strong credit situations can be built by feed companies, Mr. Johnson said. In the past, banks have not been able to participate in financing many feeding projects because this type of operating record was not available. A balance sheet and similar type of information is all that generally has been produced, and this has led to financing of only two kinds of risks: The big operator with many capital assets and the real small operator who had outside income from a job somewhere else. The development of the proper kind of statistical information on operating costs and management practices will make it possible to extend bank financing to the "gray area" between these two extremes, Mr. Johnson said.

The credit executive in a feed company should be, and is coming to be, a member of the policy making group in feed companies, Mr. Johnson said, because the use of credit is so important these days in the proper development of markets. At the same time, the credit man has an important educational responsibility within the feed company. One of the important areas of this activity lies in showing the company's sales representatives the type of information necessary to "structure" credit extension, with particular emphasis on obtaining operating cost information. In the past, few firms have been able to develop this type of information in a satisfactory manner, Mr. Johnson said.

Farm Plan Cynic

Confessing himself a cynic on the effectiveness of farm legislation, Roderick Turnbull, editor of the Weekly Star Farmer, Kansas City, said that he doubted that the present Congress would come up with any laws which would revolutionize farm economics. The most that federal legislation can do is to extend a small amount of help to farmers to get them over rough spots, but it cannot cure basic farm ills, which result from changing economic conditions, he said.

Mr. Turnbull said that Congress probably will pass some kind of feed grain control legislation, doubtless much modified from the original proposal which would permit the government to sell feed grains to break the open market to a point where feed grain farmers would be forced into the acreage control program.

"Contrary to a lot of the talk you hear," Mr. Turnbull said, "farmers do not want tough production controls." He cited a letter to voters from one of the Senate's long-time advocates of high supports and heavy acreage restrictions, in which the Senator spent some time expounding on the desirability of very tough acreage controls, but then went on to say "of course we could not expect those already in the soil bank program to cut their acreage further, and we couldn't cut acreage in any one locality below a level that would create economic distress in that locality," and so on with exceptions that completely vitiated the presumably tough acreage cutback. There is a lot of this type of inconsistency between talk and action in farm legislation, Mr. Turnbull said.

The speaker roundly condemned the proposal to raise the soybean support levels. He said that soybean growers had been getting along all right at present levels and also that if there is a need for expanded production the present market price affords ample incentive for that purpose. Soybean growers have done a good job in selling their surplus for export and if prices are pegged by the government above world market levels surpluses will accumulate and soybeans will be in the same trouble as other grains. Referring to the relatively free market in soybeans in contrast to other grains, Mr. Turnbull said farm legislators evidently "see a virgin in the crowd and don't like it. They want to get her in trouble, too."

Mr. Turnbull said that the vast majority of livestock interests do not want federal price supports or other legislation and particularly are opposed to quotas. Mr. Turnbull said the soil bank idea has merit and is not dead yet.

Long-Range Outlook

Raymond Doll, senior economist, Federal Reserve Bank of Kansas City, discussed the long-range outlook for the feed industry. He said that total feed needs should increase about 2% per year over the next decade, and should personal incomes remain high, the average gain might be more than this, possibly up to 4% per year. This demand increase is based, he said, on population growth and a preference of consumers for livestock food products over cereals and potatoes, a shift which has been quite pronounced in the past 25 years in which consumption of livestock products has gone up 100 lb. per capita.

Farm production has been able to progress because of improved techniques of which better feeds have been one important factor. More intensive feeding has made livestock product gains possible, he said, in pointing out that 27% more feed grain is now consumed by approximately the same number of livestock units as were raised 25 years ago. Some curb is needed now on feed grain production because it is now increasing faster than consumption is increasing, he said.

Explains PCA

A comprehensive explanation of the structure and operations of Production Credit Assns. was given by Ted McGuire, a member of the staff of Federal Intermediate Credit Bank, St. Louis district. Mr. McGuire said that the PCA system was set up by the Farm Credit Act of 1933 but there is much misunderstanding about PCA's in that many think these associations lend government money. This is not true, he emphasized. The funds now come from the investing public through the sale of debentures and bonds by the federal intermediate credit banks and these banks pay the going rate for money. PCA's long ago paid back every dollar of capital originally furnished by the government to get them started.

Production Credit Assns. are set up to make short-term loans of not over five years. There are two classes of stock, "A" stock which is sold to anyone to raise capital and which pays dividends like any other commercial operation and "B" stock which must be purchased by a farmer in order to qualify for a loan. There is no relationship between the amount of stock owned and the size of a loan made, but PCA rules do limit outstanding balances of individual borrowers to a total of not more than 20 times the amount of stock owned.

In 1960, Mr. McGuire said, the St. Louis district made 90,000 PCA loans totaling $331 million. Nationally over $2.5 billion was lent to farmers by PCA, he said. Loans range from $50 to over $500,000 in individual cases and some national loans have exceeded $1 million, he said. From 35 to 40% of these loans in the St. Louis area are on unsecured open notes, he said. All loans are for a definite time with a terminal date and have a specfic goal.

Production Credit Assns. are directed by local boards of directors and they are operated by a hired manager, who is experienced and who knows farming and farmers' needs, he said.

Business Prospects

Opinions of the feed manufacturing industry on 1961 business prospects and overall industry trends were reported by Martin Newell, Feedstuffs, on the basis of the survey made by this publication and which appeared in the Dec. 31 issue. In general, the survey indicated expectations of higher tonnage and a slight preponderance of belief in higher profits in 1961 than in the past year. Feed manufacturers also expect the trend toward more integration to continue, and look for more concentrate production with remixing at the dealer level and even at the farm level. Although much opposed to the development of negotiated pricing over ingredient costs, the industry belief is that this kind of thing will become more prevalent.

About 50 credit men attended the conference. E. C. McKinney, regional credit manager, General Mills, Inc., Kansas City, presided.

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INVENTORY

(Continued from page 1)

These latest USDA inventory reports indicate Jan. 1 increases in cattle and turkey numbers—and declines in hog, sheep and lamb and chicken numbers. USDA says the total inventory value of all livestock and poultry on farms and ranches Jan. 1, 1961, was $15⅛ billion—up 2% from the same date a year earlier.

Average value per head of all cattle was down 2%, milk cows down 1%, hogs up 46% and stock sheep down 12%. The average value of chickens was up 18% and turkeys up 1%.

Cattle: A 1% decrease in milk cows and dairy replacement heifers from Jan. 1, 1960, to Jan. 1, 1961, was more than offset by a 2% increase in other cattle, mostly beef-type, USDA said. This is the third consecutive year cattle numbers have shown an increase. The Jan. 1 total was 7% above the 1950-59 average of 90,789,000 head.

Cattle on feed at the beginning of this year set a new record. USDA estimated 7,583,000 head of cattle were on feed for market in the 26 major feeding states—6% above the 7,173,000 head on feed in these states a year earlier. In addition, 367,000 head of cattle and calves were on feed for market in 11 southeastern states Jan. 1, 1961.

Changes in cattle numbers from a year earlier by regions varied from a 3% increase in the south central region to a 1% decrease in the western region. The north Atlantic and west north central regions increased 1%, while the east north central and south Atlantic regions recorded no change.

(See related comment in accompanying story. And for a detailed comparison of 1959, 1960 and 1961 inventories of livestock and poultry by classes see accompanying USDA table.)

Hogs: Although the Jan. 1, 1961, hog count of 55,305,000 is 6% under the inventory of a year earlier, the latest inventory is 1% more than the 1950-59 average of 54,748,000 head.

All regions showed a decrease in numbers from a year ago. In the Corn Belt (12 north central states), which grows about 75% of all hogs, the decrease in hog numbers was 5% from Jan. 1, 1960.

Sheep: The Jan. 1, 1961, sheep and lamb inventory of 28,677,000 head is 1% below the 28,849,000 head recorded a year earlier—and with that exception was the highest inventory since 1948.

USDA said sheep and lambs on feed for market — 4,255,000 head — were 2% fewer than a year earlier. All sheep and lambs, including those on feed for market, totaled 32,932,000 head, a decline of 1% from a year earlier.

Texas, the leading sheep state, increased stock sheep numbers for the fourth consecutive year. Most western states had the same or higher numbers than a year earlier; however, Montana, Wyoming, Utah, Nevada and Arizona reported fewer stock sheep at the beginning of this year. In the native states, Ohio and Iowa showed a drop in numbers, while third-ranked Minnesota increased its sheep inventory.

The total value of stock sheep on farms and ranches Jan. 1 of this year was $419 million, down 12% from a year earlier.

Chickens: The Jan. 1 inventory of 357,910,000 chickens on farms (excluding commercial broilers) is 3% less than a year earlier and 11% below the 1950-59 average.

Decreases were 6% in the west north central and south central states and 5% in the north Atlantic and east north central states.

Numbers were above a year earlier by 6% in the West and 3% in the south Atlantic states.

Livestock and Poultry, by Classes, U.S., Jan. 1
(Source: USDA)

Class	Average 1950-59	1959	1960	1961	1961 as percent of 1960
	1,000 head	1,000 head	1,000 head	1,000 head	Percent
Cattle and calves	90,789	93,322	96,236	97,139	101
Kept for milk	34,368	30,708	30,181	29,936	99
Cows 2 yrs. and older	22,802	20,132	19,527	19,291	99
Heifers 1 to 2 yrs.	5,498	5,050	5,079	5,034	99
Heifer calves	6,068	5,526	5,575	5,611	101
Other cattle	56,421	62,614	66,055	67,203	102
Cows 2 yrs. and older	22,931	25,112	26,344	26,984	102
Heifers 1 to 2 yrs.	5,985	6,557	7,036	7,018	100
Calves	17,184	19,407	20,425	20,556	101
Steers 1 yr. and older	8,571	9,931	10,574	10,948	104
Bulls 1 yr. and older	1,749	1,607	1,676	1,697	101
Sheep and lambs	31,291	32,606	33,170	32,932	99
On feed	4,121	4,498	4,321	4,255	98
Stock sheep	27,170	28,108	28,849	28,677	99
Lambs	4,951	5,196	5,283	4,948	94
Ewe	4,143	4,549	4,562	4,067	89
Wether and ram	608	647	721	881	122
1 yr. and older	22,219	22,912	23,566	23,729	101
Ewes	21,123	21,832	22,406	22,552	101
Rams	850	893	927	918	99
Wethers	245	187	233	259	111
Hogs and pigs	54,748	58,045	59,026	55,305	94
Under 6 months	32,281	38,236	38,747	37,853	98
6 months and older	22,467	19,809	20,279	17,452	86
Sows and gilts	8,892	8,819	7,531	7,830	104
Others	13,576	10,990	12,748	9,622	75
Chickens	403,607	387,002	369,484	357,910	97
Hens	126,793	120,826	126,747	131,460	104
Pullets	251,822	246,030	225,019	208,608	93
Other	24,991	20,146	17,718	17,842	101
All turkeys	5,333	6,105	5,633	6,840	121
Heavy	---	5,266	5,026	6,234	124
Light	---	839	607	606	100
Breeder hens	3,322	3,662	3,327	4,229	127
Heavy	---	3,071	2,904	3,787	130
Light	---	591	423	442	104

Chickens on farms at the beginning of this year consisted of 208,608,000 pullets, 131,460,000 hens and 17,842,000 other chickens. A year earlier the distribution was 225,019,000 pullets, 126,747,000 hens and 17,718,000 other chickens.

Total value of all chickens (excluding commercial broilers) on farms Jan 1, 1961, was $446,589,000, compared with $390,733,000 on Jan. 1, 1960—an increase of 14%. Average value per head was $1.25—19¢ more than a year earlier but 7¢ less than the 1950-59 average value.

Turkeys: Turkey numbers increased 21% from Jan. 1 of last year to 6,840,000 on Jan. 1 of this year. The 1961 count is 28% above average.

Heavy breeds on the latest inventory date were estimated at 6,234,000, compared with 5,026,000 on hand Jan. 1, 1960—an increase of 24%. Light breeds on hand totaled 606,000, practically the same as the 607,000 reported a year earlier.

By regions, all turkeys on hand increased 26% in the west north central, 24% in the western, 23% in the east north central, 19% in the south central and 16% in the south Atlantic states. In the north Atlantic region the inventory of all turkeys was about the same as a year earlier.

Breeder hens increased 27% in numbers from Jan. 1 of last year to the same date this year. The gain in heavy breed hens was estimated at 30%. A 4% increase was estimated for light breed hens.

The 10 leading states, with 76% of the breeder hens in the nation, ranked in the order of importance, are California, Minnesota, Texas, Iowa and Oregon (tied), Virginia, Missouri, Ohio, Wisconsin and North Carolina.

The value of all turkeys on farms was estimated at $33,764,000—an increase of 23% in a year.

Horses, Mules and Goats: USDA said numbers of horses and mules on farms have declined to the point that beginning with the 1961 inventory, estimates are being discontinued.

The number of all goats and kids on farms and ranches in Texas was estimated at 3,539,000—6% above the year-earlier mark.

USDA noted that another record supply of feed concentrates was available for the 1960-61 feeding year. The total supply of all feed concentrates for 1960-61, including grains and by-product feeds, was estimated at 273 million tons, 12 million tons or 5% above the 1959-60 supply.

Cattlemen's Group Calls Inventory Changes 'Good News'

DENVER — Revised federal cattle number estimates are "good news" to the cattle industry, say officials of the American National Cattlemen's Assn.

The USDA (see accompanying story) reveals that instead of having a total cattle population of about 105 million head, as predicted during the past year, the nation had 97,139,000 animals on hand as of Jan. 1.

Although representing an increase of 903,000 over the Jan. 1, 1960, figure, this clearly indicates that the rate of increase in the current cycle has been slowed—and is far below predicted levels of growth, association spokesmen said.

Revisions Major

Revisions in the cattle estimates based upon new census data were substantial, as predicted by Dr. Herrell DeGraff, the association's economic consultant, as early as last October.

For instance, the pre-revision figure for cattle numbers as of Jan. 1, 1960, was 101.5 million. The revised estimate sets it at 96,236,000. USDA economists, using the census figures gathered in November, 1959, revised total cattle numbers and various categories back through the Jan. 1, 1965, estimates. The revision revealed that the cattle cycle hit a deeper bottom in 1957 than earlier thought and that the rate of climb back was considerably less.

American National officials emphasized in studying the current estimates recently that cattle numbers —particularly in beef animals—were still climbing, although they expressed relief that the rate of increase was not great.

Although the 1960-to-1961 change in total cattle numbers was only 903,000, beef cattle increased 1,149,000, with the offsetting reduction coming in dairy numbers. 1961's beef total is 67,203,000. Only heifer numbers, down 18,000, showed a reduction from 1960. The revised 1960 beef cattle total is 66,055,000.

Report by States

Twenty-seven major states contributed to the boost in beef cattle numbers, while 14 others, mostly in the West, showed reductions from 1960. However, 24 states, mainly in the deep South, were below (some substantially) previous peaks established in the 1953-1958 period.

Leading the beef cattle increase were Texas, North Dakota, Oklahoma, Missouri, Nebraska and California. Substantial drops were noted in Iowa, Montana, Wyoming, Florida and Nevada. Big reductions from previous peaks came in Montana, Florida, Mississippi, Nevada and Louisiana.

The beef cow inventory shows this category to be at its highest in history. At 26,984,000, it is up 640,000 from 1960's 26,344,000. Gains were contributed mainly in Texas, Oklahoma, Kentucky, Tennessee, Missouri and North Dakota. Biggest one-year reductions came in Florida, Arizona and New York; although such states as Kansas, Arizona, Florida, Nebraska, Mississippi and New Mexico are well below previous peaks.

Beef steer numbers also rose to new heights, up 374,000 to 10,948,000 from 1960's 10,574,000.

Contributing most to the steer increase were California, Missouri, Nebraska, Indiana and Arizona. Reductions from 1960 counts came in Iowa, Colorado, Kansas, Oklahoma and Illinois. Thirty-one states, notably Texas, Montana, Nebraska, Missouri, Mississippi, Kansas, Arkansas, Colorado and Iowa, were well off the pace they set in earlier years for steer numbers, the association reported.

Beef calf numbers were up 131,000 (to 20,556,000) from the revised estimates of 20,425,000 on Jan. 1, 1960. Texas led the states adding calves during the year, followed by North Dakota, Oklahoma, California and Kansas. Reductions from 1960 came in Iowa, Montana, Wyoming, Colorado and Nevada with 33 states below high levels of previous years, particularly Montana, Illinois, Wyoming, Nevada, Nebraska, Florida and Arkansas.

Heifer numbers in the "not-for-milk" category were down 18,000 from 7,036,000 in 1960 to the current 7,018,000.

Dawe's Sales Post to Robert Huelsebusch

CHICAGO — Appointment of Robert H. Huelsebusch as territory manager for Dawe's Laboratories, Inc., has been announced by Fred Heinzig, Dawe's north central regional sales manager.

R. H. Huelsebusch

Mr. Huelsebusch will represent the company in the sale of its feed additives in western Iowa, Nebraska, North and South Dakota. He is a graduate of the University of Cincinnati and formerly represented Merck & Co. in agricultural products sales and service.

MONTANA

(Continued from page 6)

content was highest at the 25% flower stage and decreased as plants matured. The difference between locations in amount of nitrates was highly significant. Dr. Frahm also cited Montana data indicating that it may be possible to recommend certain stages of growth when oats would be less toxic.

He pointed out Montana data in which an apparent relationship is higher protein associated with higher nitrate nitrogen. However, without knowledge of maturity, soil, moisture, fertilization, etc., any apparent correlation is questionable.

INCREASING THE EFFECTIVENESS OF AUREOMYCIN CHLORTETRACYCLINE—Dr. R. C. Schock of the American Cyanamid Co. explained the potentiation of antibiotics for poultry and outlined research which has been done in this field with Aureomycin. This includes reduced level of calcium in the feed and the use of calcium sulfate. In connection with the latter, he said it has been shown that calcium from calcium sulfate is as available for growth and bone formation as the calcium from calcium carbonate.

Dr. Schock went on to describe a potentiated feed program for growing birds. This includes a prestarter feed with 200 gm. of Aureomycin per ton and use of calcium sulfate and monosodium phosphate or phosphoric acid. The treatment program, with the potentiated feed fed five days as needed, also was outlined. This includes a calcium level of 0.4% or less.

Benefits from this program, Dr. Schock said, include: Higher livability, increased growth rate, improved feed efficiency, less setback from vaccination and other stresses, reduction of losses from secondary bacterial invaders, prevention of coccidiosis, prevention of losses from CRD and infectious synovitis and blue comb, fewer rejects at processing plant.

Dr. Schock also told of adaptability of potentiation in turkey feeding for disease control. Treatment may be handled through reduction of total calcium to less than 0.4%, or calcium sulfate may be used if a longer period of potentiation is desired. With the latter, adjustment is made to a 1% total calcium level and 0.8% phosphorus.

For laying birds, to maintain normal egg shell quality, a no-calcium, high level antibiotic feed could be top dressed on the regular laying mash, giving the entire daily dose of Aureomycin in one administration, Dr. Schock said. With no calcium present in a feed containing 2,000 gm. of Aureomycin, 10% of the total daily feed intake could be used for this purpose, thus achieving an effective blood level of the antibiotic. This again is a 200 gm. level of the antibiotic, but the entire dose is given in the one feeding.

PRACTICAL EFFECTS OF RECENT DEVELOPMENTS AT FDA—Current problems resulting from Food and Drug Administration regulations and interpretations were described by Lee H. Boyd of the American Feed Manufacturers Assn., Chicago. Mr. Boyd also reviewed activities of the AFMA and the feed industry liaison committee in meeting with FDA officials to seek solutions to some of the problems.

Particular attention was given to the FDA announcement that users of concentrate feeds containing new drugs must obtain clearance from FDA to use the concentrates. Mr. Boyd pointed out that this could have far-reaching implications for concentrate manufacturers, feed mixers and FDA.

It is the committee's hope that the next industry presentation to FDA will result in a change in or a modification of this policy. Evidence substantiating a previous industry statement will be presented.

RELATIONSHIP OF NUTRITION TO DEFORMED CALVES—Recent Washington studies, as well as earlier work, on a deformity of the bovine called "crooked calves" were discussed by Dr. I. A. Dyer of Washington State University. It appears that the deformity is nutritional in origin.

Furthermore, observations indicate that lupine (and perhaps other toxic plants) are not directly responsible, although they have been a contributing factor in producing crooked calves.

Limited observations, Dr. Dyer said, tend to implicate a borderline manganese deficiency as the causative agent. This may result from a deficiency per se or from some manganese chelating agent.

ENVIRONMENTAL STUDIES WITH PIGS—Dr. Bowland of Alberta told of several environmental studies with pigs. He outlined some work on influence of environment on response of pigs to different nutritive levels and rations, but he devoted most of his presentation to consideration of climatic effects on pig performance.

In a study with Aureomycin and Vigofac, during the first six weeks, neither supplement improved rate of gain in a new barn, but both supplements improved gains in an old barn, indicating an environmental response. For the entire period from start to market weight, pigs in both barns responded in rate of gain to either supplement, probably indicating a build-up of disease in the new barn.

"It is realized," said Dr. Bowland, "that under practical conditions on a farm, extremely low 'disease level' environment may seldom exist, but differences in management may definitely influence the absolute response obtained from antibiotic supplements. Similar differences resulting from changes in environment may occur in other areas as well."

In telling of work on inside vs. outside raising of market pigs, Dr. Bowland said that pigs raised inside from weaning to market gained more rapidly and more efficiently than those raised outside for this same period. He went on to comment that although pasture has a place in management of breeding stock in central Alberta, it seems to have little value for market pigs fed balanced rations.

The most recent experiments have dealt with effect of winter climate and type of shelter on growing-finishing swine. A comparison was made of relatively cheap, unheated colony houses of various types with conventional swine barns. Rate of gain and feed efficiency of pigs raised in heated swine barns were superior to those of pigs in unheated colony houses, but performance of the outside-raised pigs was reasonably satisfactory. Certain reservations were noted, but Dr. Bowland said it seems possible to plan a year-around feeding program using low, flat-topped colony houses of the closed-front type if large groups are used and the pigs are crowded somewhat in order to maintain more optimum temperatures.

PHYSICAL PLANT EQUIPMENT AND PLANS FOR HANDLING LIVESTOCK—E. B. Wilson of Montana State made an illustrated presention showing various plans and facilities for cow-calf operations and beef feeding operations.

In connection with the latter, he pointed out that beef feeding is becoming big business. Lots with a capacity of 1,000 or more are becoming commonplace. Feedlots are now in operation with more than 30,000 animal capacity.

COMPARATIVE FEEDING VALUE OF MATURE AND IMMATURE CORN SILAGES—G. F. Fries of the dairy cattle research branch of USDA told of a dairy cattle experiment in which the average moisture content of mature silage was 68.6% while that of immature silage was 79.3%.

It has been well established, with grass silage, he noted, that the rate of dry matter intake is inversely related to the moisture content. The results of the study reported suggest that a similar relationship is also true for corn silage.

CHALLENGES

(Continued from page 7)

ming in spite of the slowdown of other industries."

Veterinarian Relations

Speaking on the subject of veterinarian relations was Bob Skinner, executive secretary of the Western Grain & Feed Assn., Des Moines.

Mr. Skinner pointed out that there are many associations concerned over the sometimes strained relations between feed men and veterinarians, but pointed out that the problem is completely local and must be solved at the local level.

A solution should not be too hard, according to the association secretary, since the goal for all concerned —"the farmer, the feed man and the veterinarian—is to produce livestock and poultry efficiently and profitably."

He concluded by pointing out benefits that could be obtained through working together. Included was getting "the farmer to use a good feed and feeding and management program. This results in less disease and the veterinarian has more time to spend on disease prevention. The feed man benefits because his feed does a better job when fed to healthy animals. The farmer is able to produce his livestock more efficiently and profitably."

Opportunity

Speaking on "Agriculture—Land of Opportunity," was Dr. Earl L. Butz, dean of agriculture, Purdue University.

Dr. Butz stated that constant emphasis on the declining number of farmers has led people to think of agriculture as a declining industry. He continued, "Nothing is more erroneous than to think of agriculture as a declining industry. American agriculture is an expanding industry in every important respect except one—the number of people required to run our farms."

He pointed out, "Our agricultural plant uses each year more capital, more science and technology, more managerial capacity, more purchased production inputs, more specialized marketing facilities and more research than the year before. It is obvious, therefore, that those writers and analysts who refer to agriculture as a 'declining' industry look only at a single phase of this growing and important American industry."

To emphasize his point, he said, "We don't think of air transportation as a declining industry just because a pilot in a jet airliner can now take 100 passengers from coast to coast in half a day as compared with 20 passengers in a day and a half two decades ago. This, like agriculture, is a strong and growing industry."

He continued, "The declining trend in farm population, although viewed with alarm by some politicians and rural fundamentalists, is itself a sign of a strong agriculture. This is the age of sicence and technology in American agriculture. Brainpower has replaced horsepower as the essential ingredient on our farms. Total U.S. agricultural output has increased two-thirds in the last two decades, while farm workers have gone down some 3 million. This means that production per worker on our farms has doubled in the last 20 years. This is a remarkable increase in production efficiency. It can be matched by no other major sector of the American economy."

CONFERENCE

(Continued from page 7)

tive research applied to the complex problems yet to be solved.

"The university scientists who will participate in our program this year are men who have already contributed greatly to the advancement of agricultural research in our nation. Such men as these work in cooperation with scientists from private industry. Together, they form a team of dedicated investigators who have spearheaded a continuing technological revolution in agriculture that contributes daily to the life of our rural economy and to the welfare of all of our citizens."

Other Speakers

On the conference program for Pfizer will be Dr. C. I. Jarowski, director of pharmaceutical research and development; Dr. Herbert G. Luther, scientific director of animal health and nutrition for the firm; and W. M. Reynolds, manager of the Pfizer agricultural research and development center near Terre Haute, Ind.

These speakers will review important new developments in Pfizer agricultural research in the U.S. and abroad.

Attending the annual Pfizer event will be several hundred scientists, feed manufacturers and agricultural leaders of government and industry.

CENTENNIAL

(Continued from page 6)

undernourished areas of the world, Dr. Wilcke said.

One part of the program will deal with some public health problems in relation to dietary factors originating in animal products. Nationally known authorities on various phases of these subjects will be featured on the program, Dr. Wilcke said.

"The meeting will be an outstanding conference in keeping with the importance of the Land Grant College Centennial Celebration," Dr. Wilcke said. "It will be an important meeting for the feed industry, too, and one that no feed man should miss."

A group of educational exhibits is being planned which will help tell the story of the growth in efficiency in animal agriculture and the factors responsible for it.

Announce Program For USDA Poultry Health Symposium

WASHINGTON—Preliminary program plans for the Symposium on Poultry Health to be sponsored by the U.S. Department of Agriculture and the University of Georgia March 20-22 have been announced.

Originally scheduled for Athens, Ga., the location of the symposium has now been changed to USDA's Jefferson Auditorium, Independence Avenue between 12th and 14th Streets in Washington.

USDA says the symposium is planned primarily for research workers and scientists concerned with poultry health. However, there is also widespread interest among both producers and consumers because of the increasing importance of poultry meats and other products in the nation's food supply. The program will include discussions of the role of USDA, other public agencies and industry in producing wholesome poultry and poultry products.

USDA says condemnations of poultry and poultry products, either during processing or in marketing channels are a source of large losses to producers and tend to increase prices of these products to consumers. Symposium speakers will discuss what research can do to eliminate causes of condemnations.

Among problems to be discussed are the principal respiratory ailments

of poultry, such as infectious bronchitis, infectious laryngotracheitis, Newcastle disease and air-sac infection. Others include the salmonella infections, coccidiosis, and the avian leukosis complex. The program will also cover therapeutic measures and immunization procedures in broiler production, genetics in relation to disease control and the role in poultry health of nutrition, management and production equipment.

Discussion of engineering factors in poultry production, the role of air in transmitting infections, biological air cleaning, the importance of thermal environments and climatic considerations in poultry house design will round out a program covering all factors relating to poultry health. The detailed program will be announced as soon as arrangements are completed, USDA said.

Memphis Oilseed Meal Futures Move Ahead

MEMPHIS, TENN.—Oilseed meal futures prices continued to move substantially ahead on the Memphis Board of Trade during the week ended Feb. 28.

The very strong soybean futures market proved the biggest factor, with meals following their advances.

Eastern Trunk Line soybean oil meal closed Feb. 28 $4.50 to $4.75 per ton higher than on Feb. 21, unrestricted soybean oil meal $2 to $4.50 higher, and bulk solvent cottonseed oil meal $2 to $2.50 higher.

MARKETS

(Continued from page 2)

resulted in prices dropping 3¢ a bushel, with the range $1.32 to $1.38, depending upon locations. With the recent rise in both soybean meal and cottonseed meal, major feed ingredient buyers who are not covered ahead, for future months, are only willing to buy on an as-needed basis, as many feel that there may be cheaper prices at times.

Warm weather has slowed down the demand for cottonseed hulls, resulting in prices declining $3 per ton. Major citrus pulp manufacturers reduced their prices for citrus pulp early last week to $40 f.o.b., however it is reported that some of the smaller producers who have limited storage space were forced to take $2.50 per ton less for pulp in loaded cars. Demand for pulp outside the state, could be better, but as long as snap corn is available, at the same prices as pulp being delivered, dairymen prefer to use the corn.

Pacific Northwest

Oregon, Washington and Idaho formula feed sales improved slightly this week as feeders replenished inventories. All types of poultry feeds moved very well and the demand for dairy mashes increased somewhat because wet soil conditions restricted outside grazing.

Quotations for feed ingredients turned rather sharply higher the last week in February with the upward swing led by soybean meal and animal protein feed. Principal reasons for the advance included a slight improvement in buying interest for limited offerings of important items.

A $5 a ton advance was posted by soybean meal in the face of tight offerings. Meat meal listings also gained $5 a ton while cottonseed values gained $1 and herring meal prices were up 15¢ per protein unit.

Quotations for barley, corn and milo made moderate to fractional gains while wheat millfeed listings steadied and closed unchanged to 50¢ a ton higher on firmer held offerings. Oregon and Washington millfeed production was estimated at some 7,150 tons this week compared with 7,250 the previous period. There was some export inquiry but only small lots were reportedly booked for March-April shipment to Japan.

Pacific Northwest alfalfa hay trading was quiet and prices were considered as being unchanged. Trade sources indicated that available supplies were plentiful, but in somewhat firmer hands following recent price declines. Heavy rains during the past week or ten days have made lowland pastures too wet for grazing and some open alfalfa stacks in producing areas were damaged.

South Central

Formula feed business is described as being rather dull this week with volume holding about steady. Sales for most mills fall just short of equalling the normal five day production level.

Besides the usual tendency for feed demand to ease off during this season of the year, manufacturers say several other factors are involved. First, the weather is playing an important role in holding down formula feed sales. Last month's moderate temperatures reduced feed consumption and stretched out supplies. Second, feed men say that even though there has not been much grumbling over the increased prices of feeds, buyers are quite cost conscious and are inclined to "make do" with what they have when prices move up rapidly.

So far as prices are concerned, mill men say another stiff boost is in store for the price lists to be issued over the weekend.

Mountain States

Continued mild and fair weather is hurting the cattle feeding business in this area. Range cattle are not coming into the feedlots like they did last year due to the mild weather and cattle are not eating like they usually do this time of year. Many feedlots are reported almost empty, but dealers expect the feedlots to start filling up the latter part of this month. Protein feeds have been holding fairly steady but grain feeds are generally weaker and feed prices generally are stronger for this time of year.

Ohio Valley

February finally passed. In the Ohio Valley it was one of the stormiest and most difficult winter months in a decade. But a definite note of hope for improving conditions was a weather bureau report at mid-week that severe flood conditions are unlikely. In fact, the recent heavy rains appear to have penetrated into the sub-soil rather than running off, thus considerably raising the underground water table.

But irrespective of weather conditions, sales of formula feeds continue moving at the steady levels noted during recent weeks. It is becoming increasingly apparent that both manufacturing procedures and truck deliveries have become so systematized throughout the valley area that rush production periods are a thing of the past.

Although severe weather during the last week reduced receipts at area stockyards and wholesale egg and poultry markets, supplies were reported sufficient for retail demands, with prices remaining virtually static. Some sharp swings were noted in several ingredient prices, with these swings being attributed mostly to market speculation.

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